JEFFERSON COUNTY AGRICULTURAL AND FARMLAND PROTECTION PLAN

2002

TABLE OF CONTENTS

OVERVIEW OF AGRICULTURE IN JEFFERSON COUNTY

1) Natural Characteristics of Jefferson County

2) Soil Resources 11

3) Economics of Jefferson County Agriculture

4) Agricultural Land Use

5) Jefferson County Agricultural Districts 15

PRODUCTION AGRICULTURE

1) Livestock

2) Field Crops

AGRICULTURAL ECONOMIC DEVELOPMENT & FARMLAND PROTECTION

LIST OF TABLES

LIST OF GRAPHS

LIST OF MAPS

APPENDICES

ACKNOWLEDGEMENTS

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1) Purpose and Background

The Jefferson County Agriculture and Farmland Protection Board received a matching grant from the New York State Department of Agriculture & Markets which along with County funds were used to develop an Agriculture and Farmland Protection Plan for Jefferson County. The objectives of the Agriculture and Farmland Protection Board in producing the Plan include:

- Determining if agricultural lands in Jefferson County are in the need of protection from development, abandonment, societal pressure and other causes;
- Determining which agricultural lands are in need of protection;
- Examining what agricultural economic development opportunities should be explored that can increase agricultural profitability and the retention of farmland in Jefferson County;
- Involving the agricultural industry and County government in developing an agricultural and farmland protection plan and empowering them to help in implementing the results; and
- Determining what national, state and regional financial resources are available that can be used in implementing an agricultural and farmland protection plan.

The process used in developing an Agricultural and Farmland Protection Plan was based on guidelines specified by the New York State Department of Agriculture and Markets. Under these guidelines, the Jefferson County Agricultural and Farmland Protection Board contracted with The Center for Community Studies at Jefferson Community College to develop and oversee an agricultural survey of agricultural landowners in the County. The survey process was used to evaluate the current land use issues and trends facing agricultural property owners in the County.

Another part of the process was to conduct focus group meetings in Jefferson County to share with local land owners and the agricultural community the initial data collected through the survey process, and to obtain additional information from participants about the results that were presented. Two focus group meetings were held in Jefferson County. These meetings were held in Watertown, at Jefferson Community College, and in LaFargeville, at the Town of Orleans Office Building. There were approximately 20 landowners who attended each of these meetings. Their input and the issues raised at these meetings were added into the final survey results.

2) Benefits of Agriculture to Jefferson County

Jefferson County agriculture offers many social and economic benefits to this region. Many of these benefits, however, are not recognized by the general public. Without the agricultural sector offering both seasonal and year round employment there would be a significant economic loss to the County. Some of these social and economic benefits include:

- Over $77 million dollars of gross revenue generated annually by farm businesses in Jefferson County.

- Economic models have estimated the economic multiplier mean for all production agriculture industries, based on a Total Income analysis in New York State, to be 1.66 (Policy Issues in Rural Land Use, Vol. 9 No.2, December 1996). The dairy sector, which contributes 78% of the gross revenue sales for Jefferson County, is estimated to have a Total Income multiplier effect of 2.29. Based on rough estimates, the agriculture industry in Jefferson County contributes over $150 million to the local economy each year.

- While gross revenue dollars for manufacturing dairy products are not available, dairy manufacturing has the greatest multiplier effect compared to all other economic sectors. Dairy manufacturing's Total Income multiplier is estimated to be 2.61 (Policy Issues in Rural Land Use, Vol. 9 No.2, December 1996). Maintaining a strong dairy industry helps to maintain a strong manufacturing industry which also contributes higher economic returns for a region.

- A large number of agribusinesses located within the County that support local agricultural businesses.

- Jobs for individuals interested in working on farms or for local agribusiness.

- Recreation and tourism attractions including hunting, fishing, motorized vehicle use and farm tours.

- Open space and scenic landscape.

- An environment that offers a high quality of life.

- A variety of agricultural products that are produced and sold locally.

1) General Description and Characteristics

Location: Jefferson County is located in the northern tier of New York State at the juncture of Lake Ontario and the St. Lawrence River. The County borders Lake Ontario and the St. Lawrence River on the west and north, respectively. To the northeast is St. Lawrence County; to the east, Lewis County; and south, Oswego County. Jefferson County is also located directly south of the Province of Ontario, Canada. The largest nearby U.S. population center is Syracuse, New York, 70 miles to the south.

Description: The population of Jefferson County in 1990 was 110,943, which represented nearly a 26% increase over the 1980 total of 88,151. Jefferson County experienced the greatest rate of growth of any county in New York State during this period. The major impetus for this growth was the activation of the U.S. Army 10th Mountain Division at Fort Drum, which is located in the northeastern section of the County. Jefferson County's population in 2000 showed a small increase to 111,738. The population of the County is distributed among 22 towns, 20 incorporated villages, and one city. The major population center of the County is the City of Watertown with no part of the County being over 28 miles away. Watertown is also the County Seat. Major U.S. and Canadian cities, such as Buffalo, Albany, Scranton, Montreal, Toronto, and Ottawa are located within a 250-mile radius of Watertown.

The Black River divides the County in half, east to west. Hydro power afforded by the Black River was an important attraction for settlements in the early days of the County's development. Industries sprang up along the River, many surviving today in the Villages of Brownville, Deferiet, Carthage and West Carthage, along with the City of Watertown.

Topographically, the County can be divided into the St. Lawrence River Valley\Thousand Islands Region, Lake Ontario lowlands, Tug Hill Region, Black River Valley, and the Theresa Lakes Region. The County encompasses 1,272.2 square miles of land (U.S. Census Bureau, 2000), making it the ninth largest county in the State. Active agriculture, abandoned agriculture, and forests are the most predominant land use types in the County. Other major categories include public land (largely represented by Federal property at Fort Drum) and wetlands.

2) Utilities

Electricity: Electrical service throughout the County is provided by the Niagara Mohawk Power Company with the exception of two municipally owned electric companies in Philadelphia and Theresa.

Natural Gas: Natural gas is available in the County generally along the Black River corridor and the southern portion of the I-81 corridor.

3) Transportation Infrastructure

Highways: Jefferson County has an excellent network of highways. The major route through the County is Interstate 81, a four lane divided highway. Immediately north of the County, it connects to Canada's important east - west Highway 401 midway between Montreal and Toronto. To the south, Interstate 81 travels through Jefferson County and continues down the east coast to Knoxville, Tennessee.

Fifteen New York State Routes and US Route 11 form a framework of principal trucking routes that connects all population centers in Jefferson County. There are a total of 408 miles of New York, U.S., and Interstate roads in Jefferson County, see Map 3, that are direct routes to Syracuse, Utica, Ogdensburg, Gouverneur, and Ontario, Canada.

Railroads: Rail service is available in Jefferson County and is utilized by local agribusinesses for bringing feed and fertilizer into the County for agricultural use.

Waterways: The St. Lawrence Seaway System is an international waterway from the Atlantic Ocean inland to Duluth, Minnesota. The two Seaway deep water ports closest to Jefferson County are the Port of Ogdensburg in St. Lawrence County, approximately 60 miles from Watertown, and the Port of Oswego, also approximately 60 miles from Watertown. These ports offer businesses additional means of import and export capability.

1) Population Growth and Trends

Trends in County Population from 1900 to 2000: The decennial population totals from the U.S. Census demonstrate that Jefferson County experienced very slow growth prior to 1980. The County grew only 14.9% from 1900 to 1980, which correlates to a gain of 11,403 residents. In contrast, during the same eighty-year span, New York State experienced a growth rate of 141.6%.

The largest increase in growth prior to 1980 for both Jefferson County and New York State occurred from 1900 to 1910. This trend did not last and the next thirty years brought a minimal increase in population. In fact, from 1930 to 1940, the County population was stagnant and grew only one-half of a percent. The 1940s and 1950s brought a small growth spurt, but it was very short-lived; and the 1960s again brought less than a one percent growth rate. The only decade of population decline in Jefferson County occurred from 1970 to 1980. New York State also experienced a loss of population during this decade.

Population growth can only occur in two ways, by natural increase or by net migration. Jefferson County long exhibited significant population out-migration. Therefore, the population growth in the County depended on the natural increase of births over deaths. This is evident by the natural increase versus actual increase from 1960 to 1970. During this decade, the County gained 7,557 people from natural increase; and yet the actual population increase was only 673. This indicates nearly 7,000 people left the County during that decade. The first four years in 1980 brought little change to the slow, steady growth rate that Jefferson County had experienced for the last eighty years. In 1984, the Army announced that Fort Drum, a 107,625 acre military reservation in the northeast corner of the County, would be the new home of the 10th Mountain Division (Light Infantry). At that time, planning and construction began to accommodate the expected population increase. In 1985, the 10th Mountain Division was activated in a formal ceremony at Fort Drum. The next five years brought the on-base and off-base construction of residential developments to house the military population. Most of Fort Drum's growth, approximately 70%, occurred between 1987 and 1988. By 1990, the County's population of 110,943 showed nearly a 26 % increase since 1980. This made Jefferson County the fastest growing County in New York State during the decade. In comparison, the New York State population only grew by a little less than 3%.

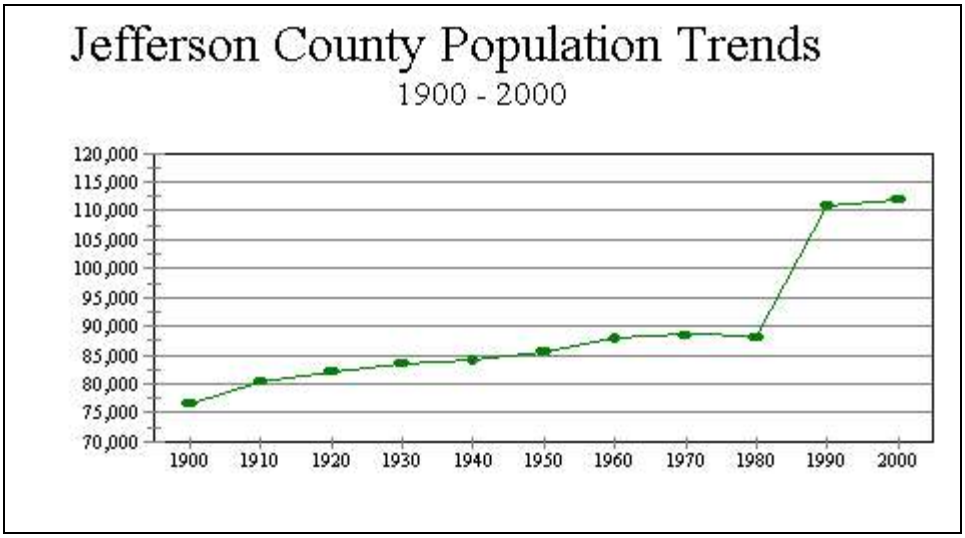
Jefferson County's 2000 Census figure of 11,738 demonstrates a .7% increase from 1990 and shows a return to the historically slow growth rate. The rural areas of the County grew by 7.5% while the villages declined by -5.93% from 1990 to 2000. The Towns of Cape Vincent, LeRay, Lorraine and Lyme all grew by more than 20% during this period.

Future Trends: As of July, 2001, the County's population was estimated at 109,535 by the U.S. Census Bureau. This is a decrease of 2.0 % from the 2000 population number. While the Census Bureau is estimating a decline in the local population one year after the Census, there are several large economic development projects in the region that will potentially increase population. Stream International has announced that it will open a 700 job Call Center in the City of Watertown and the Pyramid Company is moving ahead with plans to enlarge the Carousel Mall in Syracuse into the largest mall complex in the United States, DestiNY, USA. It is anticipated that both of these projects will have positive affects on the local economy. If Fort Drum were to expand, due to the recent increase in military activities worldwide it would also have a positive impact on population growth.

Decennial Population Change
Jefferson County & New York State

Year	Jefferson County	Percent Change	New York State	Percent Change
1900	76,478		7,268,894	
1910	80,382	5.10%	9,113,614	25.38%
1920	82,250	2.32%	10,385,227	13.95%
1930	83,574	1.61%	12,588,066	21.21%
1940	84,003	0.51%	13,479,142	7.08%
1950	85,521	1.81%	14,830,192	10.02%
1960	87,835	2.71%	16,782,304	13.16%
1970	88,508	0.77%	18,241,391	8.69%
1980	88,151	-0.40%	17,558,072	-3.75%
1990	110,943	25.86%	18,044,505	2.77%
2000	111,738	0.72%	18,976,457	5.50%

Source: U.S. Census Bureau



Distribution and Density: The population density in Jefferson County increased from 87 persons per square mile in 1990 to 88 in 2000. The highest densities occurred in the City of Watertown and the villages. The rural areas of the County have very low population densities. The highest density in a rural area in 2000 was the Town of Watertown with 125 persons per square mile. The lowest density is found in the Town of Worth at 5 persons per square mile. However, overall population densities in rural areas are increasing, as shown by the table below.

POPULATION DENSITY OF RURAL AREAS 1990 and 2000

Towns*	1990 Persons/sq. mile	2000 Persons/sq. mile	Percent change
Adams	43.03	46.18	7.32%
Alexandria	38.11	41.66	9.32%
Antwerp	10.55	10.17	-3.60%
Brownville	51.04	56.48	10.66%
Cape Vincent	37.37	46.38	24.11%
Champion	55.74	52.41	-5.97%
Clayton	30.48	37.02	21.46%
Ellisburg	32.33	34.47	6.62%
Henderson	30.70	41.35	34.69%
Hounsfield	37.79	41.23	9.10%
LeRay	48.45	72.02	48.65%
Lorraine	19.64	23.84	21.38%
Lyme	20.00	25.83	29.15%
Orleans	31.62	34.66	9.61%
Pamelia	81.38	84.36	3.66%
Philadelphia	17.93	16.92	-5.63%
Rodman	24.08	27.15	12.75%
Rutland	56.04	55.10	-1.68%
Theresa	21.72	24.96	14.92%
Watertown (T)	120.58	124.53	3.28%
Wilna	28.14	27.53	-2.17%
Worth	5.07	5.41	6.71%

Source: U. S. Census

* The Town figures do not include Village, City or Fort Drum Area.

Population trends and density can have an impact on rural communities. As rural populations increase, potential for land development increases. Development on highly productive soil resources can have a negative impact on the local economy and agricultural production practices.

2) Housing

The total number of housing units in the County increased by 7.03% between 1990 and 2000. In the rural areas (outside the City and villages) the number of housing units increased 11.7% between 1990 and 2000 while the villages increased by 2.2% and the City of Watertown increased by only .4%. This appears to indicate that more residential development is occurring in the rural areas as opposed to the urban.

Towns*	1990 Total Housing Units	2000 Total Housing Units	Percent Change	Villages	1990 Total Housing Units	2000 Total Housing Units	Percent Change
Adams (T)	1,187	1,238	4.30%	**Adams (V)**	772	781	1.17%
Alexandria (T)	2,540	2,623	3.27%	**Alexandria Bay (V)**	658	624	-5.17%
Antwerp (T)	427	412	-3.51%	**Antwerp (V)**	294	305	3.74%
Brownville (T)	1,588	1,780	12.09%	**Black River (V)**	523	556	6.31%
Cape Vincent (T)	2,065	2,281	10.46%	**Brownville (V)**	438	447	2.05%
Champion (T)	986	991	0.51%	**Cape Vincent (V)**	427	502	17.56%
Clayton (T)	1,937	2,288	18.12%	**Carthage (V)**	1,751	1,626	-7.14%
Ellisburg (T)	1,288	1,513	17.47%	**Chaumont (V)**	289	273	-5.54%
Henderson (T)	1,552	1,557	0.32%	**Clayton (V)**	1,077	1,049	-2.60%
Hounsfield (T)	899	1,048	16.57%	**Deferiet (V)**	118	134	13.56%
LeRay (T)	4,115	4,653	13.07%	**Dexter (V)**	404	455	12.62%
Lorraine (T)	286	400	39.86%	**Ellisburg (V)**	91	100	9.89%
Lyme (T)	1,816	1,910	5.18%	**Evans Mills (V)**	266	276	3.76%
Orleans (T)	1,797	2,084	15.97%	**Glen Park (V)**	201	190	-5.47%
Pamelia (T)	969	1,129	16.51%	**Herrings (V)**	56	44	-21.43%
Philadelphia (T)	228	228	0.00%	**Mannsville (V)**	152	168	10.53%
Rodman (T)	364	455	25.00%	**Philadelphia (V)**	537	595	10.80%
Rutland (T)	848	938	10.61%	**Sackets Harbor (V)**	708	791	11.72%
Theresa (T)	985	1,288	30.76%	**Theresa (V)**	353	358	1.42%
Watertown (T)	1,362	1,502	10.28%	**West Carthage (V)**	851	915	7.52%
Wilna (T)	743	854	14.94%	**Village Totals**	9,966	10,189	2.24%
Worth (T)	166	259	56.02%	**Watertown (C)**	12,405	12,450	0.36%
Rural Areas Total	28148	31,431	11.66%				
Jefferson County	50,519	54,070	7.03%				

* Does not include villages.

Source: U.S. Census Bureau

3) Population Impact on Agriculture

The increase in population and the number of housing units in the rural areas increases the density of people. This increases the possibility of conflicts between agricultural practices and residential properties. While there has not been many documented cases of these conflicts to date, the increase in rural residential development will increase the likelihood. As well, as population and the number of housing units in rural areas increase, it is likely that additional agricultural land will be converted to non agricultural uses.

1) Natural Characteristics of Jefferson County

Location: Jefferson County is located in the northern part of New York State, at the east end of Lake Ontario, in what is locally called the "North Country". It has a total area of 1,253 square miles or 801,878 acres (Census of Agriculture).

Picturesque shoreline extends more than 150 miles along the St. Lawrence River, Lake Ontario and their offshore Islands. The St. Lawrence River and Lake Ontario make up the St. Lawrence Seaway, which connects the Great Lakes to the Atlantic Ocean.

There is a significant amount of public land in Jefferson County. The Department of the Army at the Fort Drum Military Reservation uses approximately 107,000 acres of land. The New York State Department of Environmental Conservation manages nearly 16,000 acres of forest and almost 39,000 acres of wildlife area, coastal lands and wetlands. The NYS Department of Parks and Recreation operates 13 NYS Parks in the County.

Climate: Jefferson County winters are cold and summers moderately warm with occasional hot spells. The Tug Hill Plateau and other upland areas are markedly cooler than other areas of the County. Precipitation is well distributed throughout the year and is nearly always adequate for all crops.

Total annual precipitation for Jefferson County is 40 inches. This, however, can vary greatly depending on the region of the County (Agricultural Economic Profile for Jefferson County, 1998). Of this, 20 inches usually falls from April through September. Winter snows occur frequently with some regions experiencing greater amounts than others due to lake effect snow. The average seasonal snowfall is 101 inches.

In winter the average temperature is 21 degrees F, and the average daily minimum temperature is 12 degrees F. In the summer the average temperature is 68 degrees F, and the average daily maximum temperature is 77 degrees.

Due to its geographical location, Jefferson County has numerous and diverse micro-climates. These climates offer both challenges and opportunities for agricultural production. Lands in close proximity to Lake Ontario and the St. Lawrence Seaway have slightly milder temperatures and are often cooler later in the spring and have an extended growing season in the fall. Depending on future consumer demands, Jefferson County has the potential to diversify its agricultural production on land that may not be well suited for traditional types of production agriculture.

Water Resources: Jefferson County, except for some isolated areas, has adequate potable water resources. The ground water for individual use is obtained principally from wells drilled in bedrock. Surficial deposits are generally too thin to support a water table. Shallow dug wells supply some water, but usually run dry when the water table is low. In some instances, domestic water supplies are obtained from springs. Several artesian wells in the Watertown area provide an excellent source of high quality drinking water.

Water is scarce in the areas where thin clay and silt deposits overlie limestone bedrock. These areas are mainly in the towns of Cape Vincent, Lyme, Brownville, Hounsfield, Henderson, Watertown, Rutland, and Pamelia.

Jefferson County has numerous streams and lakes. They include the Black River, Lake Ontario, the St. Lawrence River, the Indian River, and Sandy Creek. They can reliably supply water in more than adequate quantities to all parts of the County. Each of these sources can provide good quality potable water after treatment.

Lake Ontario and the St. Lawrence River receive most of the drainage waters from Jefferson County. The Black River enters the County at Carthage, flowing westward through the City of Watertown and emptying into Lake Ontario at Black River Bay in Dexter.

In the southern part of the County, Lake Ontario receives drainage from a number of small streams. The largest of these are Sandy Creek, South Sandy Creek, North Branch Sandy Creek, Mill Creek, Skinner Creek, and Stony Creek.

Physiology and Geology: Jefferson County lies within three physiographic regions in the northern part of New York. They are the St. Lawrence River Basin, in the northwestern part of the County along the St. Lawrence River; the Erie- Ontario Plain, in the southwestern part of the County, east of Lake Ontario; and the Tug Hill Plateau, in the southeastern part of the County.

The St. Lawrence Valley and the Erie- Ontario Plain comprise most of the total land area in the County. Together, they are called the “lowlands”. The topography varies from nearly level to rolling and broken, commonly with steep rock ledges. Elevations range from 246 feet mean sea level (m.s.l.), near Lake Ontario and the St. Lawrence River to 650 feet m.s.l.. on the beach of glacial Lake Iroquois, south of Watertown.

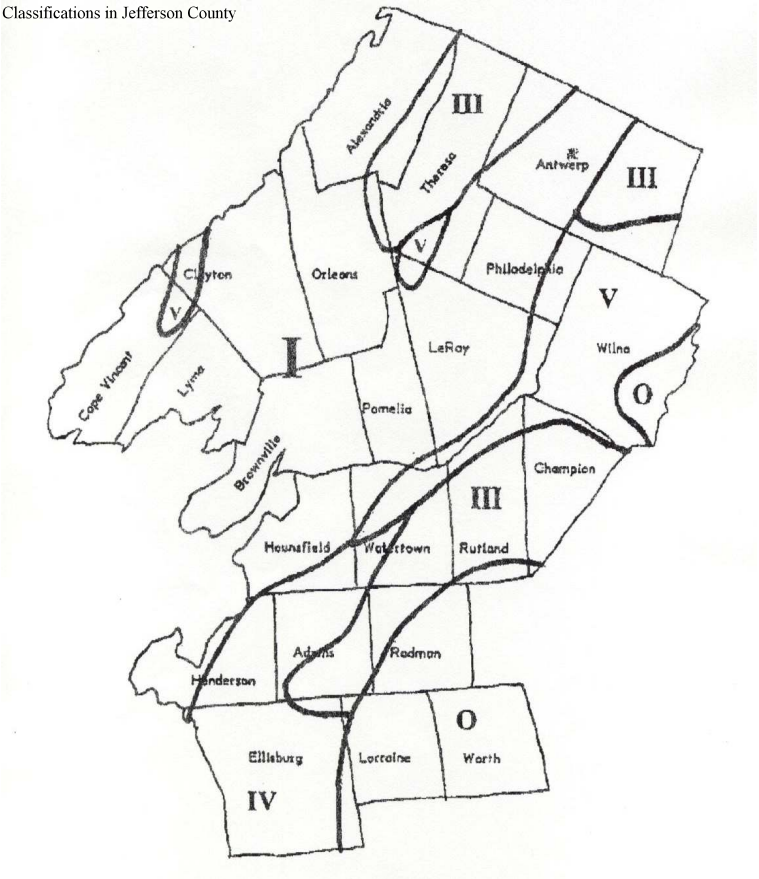
The uplands are the Tug Hill Plateau. The elevations range from 650 to 700 feet m.s.l. just south of Black River near West Carthage and Champion to 1,700 feet m.s.l. east of Worth Center. The topography is rolling to hilly. Some features include gorges or gulfs where streams have cut deep narrow channels 100 to 250 feet deep in the underlying shale leaving almost perpendicular cliffs or sidewalls.

Some conspicuous features of the lowlands are the “Clay Plains”; prairie like areas of clayey soils which are almost level, and the “Pine Plains”; an area of extensive, sand delta in the Black River Valley, which is the location of part of the Fort Drum Military Reservation. In Plessis, where flat areas and ledges of almost bare sandstone are exposed, marks in the rocks indicate a northeast – southwest movement of the glaciers. In the town of Henderson near Lake Ontario, extensive flat areas and ledges of almost bare limestone occur.
Glacial till serves as one of the parent materials for the County. The glacial till varies in composition, but is generally characterized by sharp-edged stone, gravel, sand, silt, and clay. As the glaciers melted from south to north, they filled low-lying areas with water. These areas became inundated with silt and clay soils. Glacial streams carried huge amounts of sand in to these glacial lakes, forming areas like Fort Drum.

2) Soil Resources

Jefferson County possesses an agricultural land base that is productive and relatively inexpensive. The soil types in the County offer the opportunity for diverse types of agricultural production to occur. With better drainage and proper management a large number of acres in Jefferson County could be put into agricultural production without any adverse affect on the environment. This would help to stimulate the economies of a number of small communities in the region, while also retaining many agricultural businesses in the County.

Major Soil Classifications in Jefferson County



Source: Agriculture Economic Profile for Jefferson County, 1998

Major Soil Types in Jefferson County

Soil Class	Soil Characteristics	% of County soils	Crops Soils Are Suited to Produce
I	Soils developed from clay and silt loams with medium lime soil and very high potash suppliers. Drainage from somewhat poor to very poorly drained. Some areas shallow, others with rock outcrops.	45%	Hay crops (limited to grasses), cultivated crops (limited to summer annual grains and forages).
III	Glacial till silt loams and sandy loams. Low lime soils with medium to low potash supply. Well to moderately well drained. Moderately deep, some with underlying hardpans.	20%	All cultivated crops, legume, grass, and hays.
IV	Silts and silty clays with pockets of outwash sands and gravels with medium lime and medium potash supply. Generally moderately drained and moderately deep with a few areas of wet or shallow soils.	15%	All cultivated crops, legume, grass, and hays.
V	Outwash sands and gravels, very acid, low lime, very low potash supply, somewhat excessively drained and droughty to very poorly drained and wet. Most of these soil types are found on Fort Drum.	10%	Not suited to cultivated crops, limited grass and hay production.
O	Glacial till acid soils, low potash supply, rocky and highly variable drainage.	10%	Cultivated crops limited to selected fields. Hay crops limited to selected fields.

Note: The table above and map below is a generalized representation of Jefferson County's soils based on the types of crops that can be grown. While there are soils within each region that could be classified differently due to soil variability, soils within these regions are similar in productivity and can be grouped accordingly. This map is meant to be used for generalized planning purposes. For more detailed information on soil classifications individuals can refer to "Soil Survey of Jefferson County, New York".

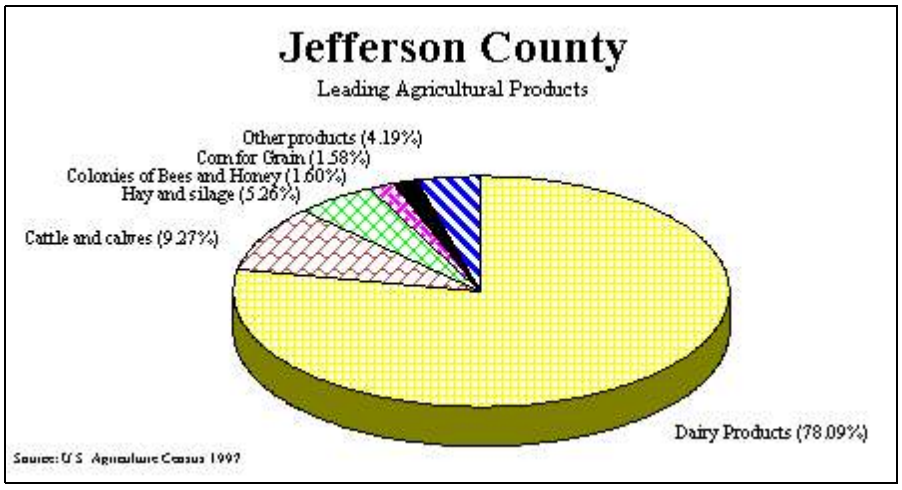
3) Economics of Jefferson County Agriculture

Leading Agricultural Products: Agriculture is a significant contributor to the overall economy of Jefferson County. The County is one of the major milk-producing counties in the state. Some other important agricultural enterprises are raising chickens for egg production; honey production; beef production and sugar bushes for maple syrup production. The main crops are hay, corn and small grains.

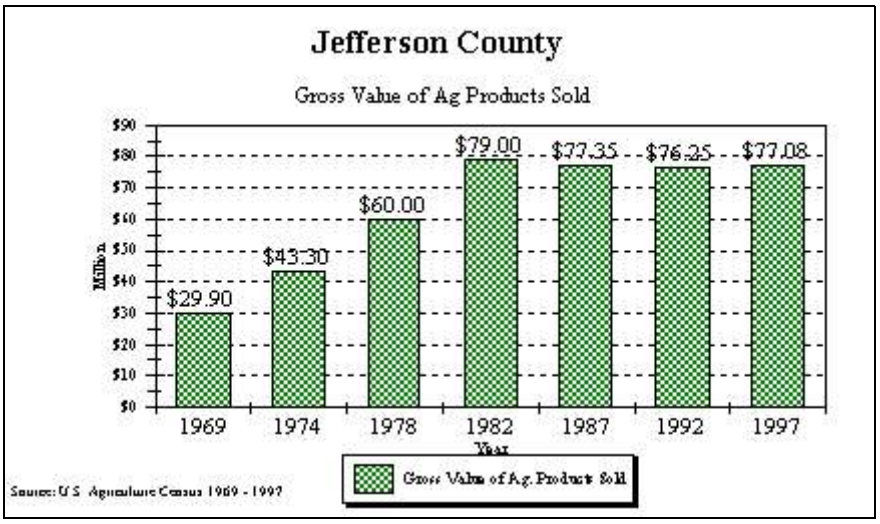
Leading Agriculture Products Jefferson County, 1997				
Product	1997 Sales (millions)	Percent of Total	County Rank 1997	County Rank 1992
Dairy Products	$60.2	78%	4	3
Cattle and Calves	$7.2	9%	5	4
Hay and Silage	$4.1	5%	2	5
Colonies of Bees & Honey	$1.2	2%	1	-
Corn for Grain	$1.2	2%	22	24
Other Products	$3.2	4%	32	32
Total Sales	$77.1		12	9

Source: Census of Agriculture 1992 and 1997

In 1992 Jefferson County ranked 9th in total sales of agricultural products sold in New York State. The 1997 Census of Agriculture ranked Jefferson County as 12th. Over this time Jefferson County dairy products fell from 3rd to 4th in dairy products sold and 4th to 5th in cattle and calves. In contrast, hay and silage and corn for grain ranked higher in total sales. Jefferson County also ranked number one in total sales for colonies of bees and honey for 1997.

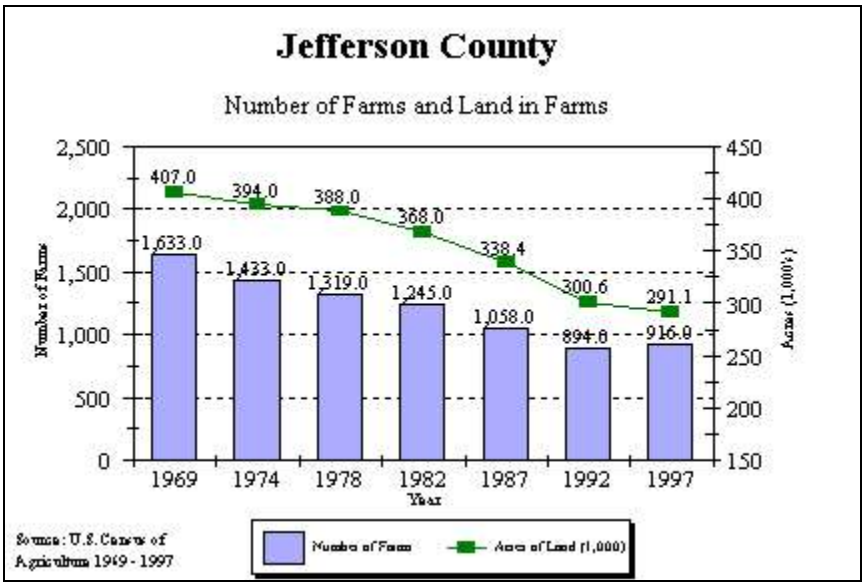


Gross Value of Agriculture Products Sold: The total value of agricultural products sold in Jefferson County has been stagnant since a high in 1982. Considering inflation, Jefferson County has been moving backwards in total value of agricultural products sold. Substantial growth in the dairy industry over the past 4 years should reflect some additional returns in the future.



4) Agricultural Land Use Trends

From 1969 to 1997 Jefferson County lost approximately 28.5% of land in agricultural production. Where once there was over 50% of the land base in agricultural production, only 36.3% remained in agricultural production in 1997. From 1978 to 1992 Jefferson County experienced the expansion of Fort Drum. Just as important, however, were a number of agricultural programs that producers took advantage of which potentially removed agricultural land from production. These programs included: eliminating the Dairy Price Support Program which valued milk based on parity in the 1970's; Conservation Reserve Programs, which removed agricultural land from production in lieu of payments for not growing certain crops; and the Dairy Buyout Program that occurred in the early 1980's, which was aimed at removing cattle from production as a means to correct supply and demand of milk. By removing cows from production the need for forages and grains decreased which had a potential impact in the number of acres of crops being grown.



Percent of Land in Agricultural Production		
Acres of Land in Jefferson County		801,878
Year	No. of Acres in Agricultural Production	Percent in Agricultural Production
1969	407,000	50.76%
1974	394,000	49.13%
1978	388,000	48.39%
1982	368,000	45.89%
1987	338,401	42.20%
1992	300,559	37.48%
1997	291,103	36.30%

Source: Census of Agriculture 1969 - 1997

5) Jefferson County Agricultural Districts

New York State Agricultural Districts Law authorizes counties to create Agricultural Districts when petitioned by farmers. The first agricultural district in Jefferson County was established in the Town of Champion in 1976. Since that time the County has created a total of sixteen (16) agricultural districts in accordance with procedures outlined in the New York State Agriculture and Markets Law. The County's districts currently comprise approximately 456 farms and 150,265 acres of land located in 19 towns. Agricultural Districts are established to provide agricultural landowners certain benefits and to strengthen the identity of the agricultural community in which they are located. In 1995, Jefferson County began a process to consolidate the 16 Agricultural Districts into 3. The first two consolidations have been completed and the third, which will consolidate districts 6, 10 and 11, is currently scheduled to be completed in 2003.

Jefferson County Agricultural District Summary				
	Total Acres	Number of Farms	Number of Acres in Farms	Number of Acres Cropped
Consolidated #1	42,747	102	36,860	12,022
Consolidated #2	43,778	90	41,398	13,952
6	48,014	219	45,992	24,530
10	20,101	35	16,664	12,774
11	9,495	10	9,351	2,500
Totals:	164,135	456	150,265	65,778

Source: Jefferson County Department of Planning, 2002

1) Livestock

Dairy: The dairy industry is Jefferson County's largest agricultural contributor to the region. The dairy industry ranks 4th in New York State based on Census of Agriculture data in 1997 and 41st nationally according to Market Administrator data for May of 2001 (Source: Northeast Dairy Business Magazine, May 2002). In 1999 there were approximately 328 dairy farms in the County selling 520,679,471 pounds of milk for the year (Market Administrator's Bulletin; Vol.59, Qrtly. D). This generated over $72.5 million in revenue that was used for goods and services both in and outside of Jefferson County. While the number of dairy farms continue to decline, the size of farms continues to increase. Due to the increase in size and efficiencies, average milk production per farm grew from an average of 891,609 pounds in 1987 to 1,587,437 in 1999. Milk prices on average have ranged from $11.76 per hundredweight to $14.77 per hundredweight which can have a major impact on yearly gross value of milk sold.

Jefferson County

Milk Market Statistics

Year	Number of Farms	Volume of Milk Sold (Millions)	Average Pounds Milk Sold / Farm (Millions)	Gross Value of Milk Sold (Millions)	Avg. Price Received per cwt.
1987	572	510.0	.89	$62.4	$12.23
1988	520	496.1	.95	$59.3	$11.95
1989	462	456.1	.99	$60.2	$13.20
1990	443	450.0	1.02	$60.7	$13.50
1991	429	437.1	1.02	$51.4	$11.76
1992	446	479.0	1.07	$61.1	$12.76
1993	430	473.7	1.10	$59.2	$12.51
1994	412	473.6	1.15	$60.9	$12.85
1995	403	488.0	1.21	$60.7	$12.44
1996	392	480.1	1.22	$68.8	$14.34
1997	386	507.6	1.32	$64.5	$12.71
1998	344	507.2	1.47	$74.9	$14.77
1999	328	520.7	1.59	$72.6	$13.93

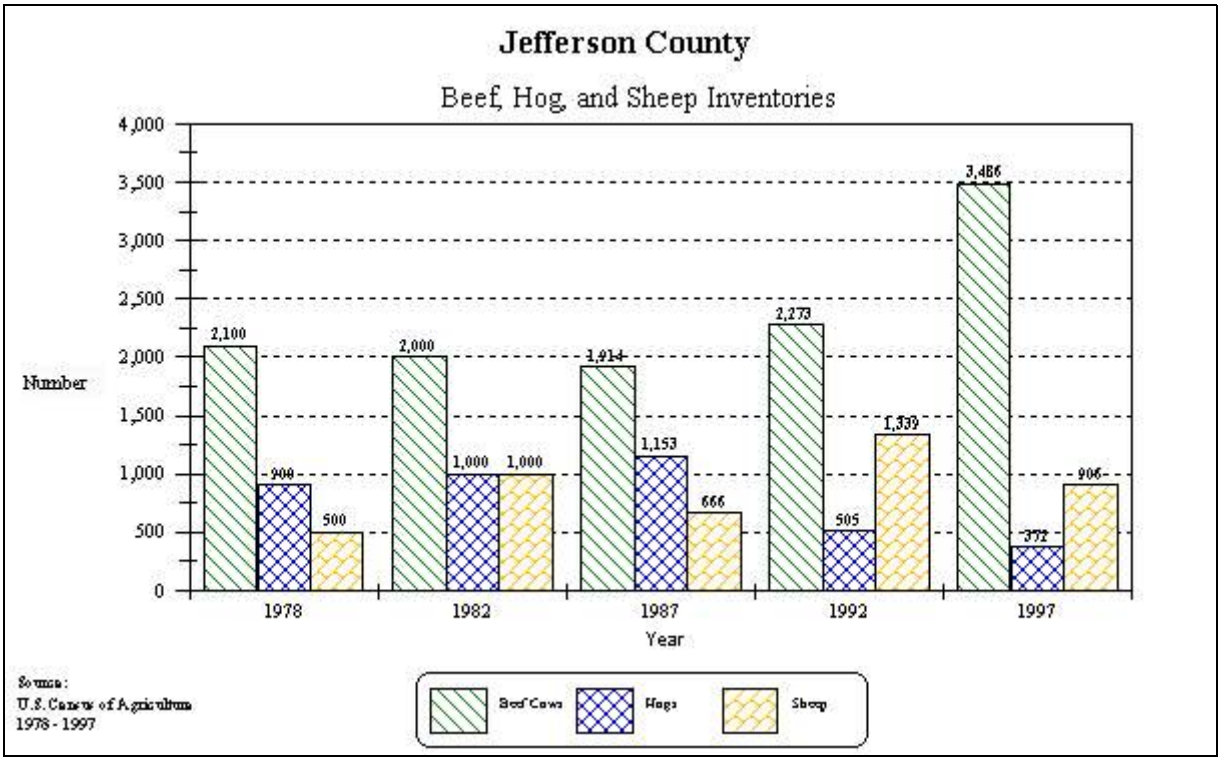
Source: Federal Order #1 and Federal Order #2 Yearly Reports

Other Livestock: In the effort to reduce the risk of business losses due to market price volatility, a number of agricultural producers have become diversified in what they produce. Others have begun small businesses in non-traditional agricultural products trying to take advantage of certain niche markets. Products that local producers have tried to develop on a small scale have included sheep and lambs for wool and meat, swine, horses and deer. These categories collectively do not amount to a significant percentage of total agricultural production in the County. However, the reason they are mentioned here is because of the economic opportunity they may offer the local economy. Growth in these areas will be dependent on what processing and marketing opportunities may become available in the future.

Beef Cattle and Calf Production: Beef production in Jefferson County has shown some growth since the late 1980's. In 1997 it was estimated that the number of beef animals in Jefferson County totaled 3,486 head. Land resources that can be utilized for grazing are becoming increasingly available, but it is theorized that the lack of local processing and packaging facilities continues to restrict the growth of this industry in the County.

Sheep and Lambs: Since the early 1980's sheep and lamb production has been inconsistent. Two of the major products from sheep that have gained some interest locally are wool and meat. Much of what is produced is processed and sold out of the County. The economic return from this industry is presently small. Grasslands in Jefferson County are available to expand this industry if the interest increases.

Hogs: Swine production has continually declined in Jefferson County since the late 1980's. While there has been some interest in this industry in the County it has been slow to develop.



Markets for pigs are available and prices have been strong in recent months. A growing

interest in roaster pigs has increased the demand and helped improve the price for this product in the region.

Horses: While there are a number of horse farms in the County, they do not represent a large sector of the agricultural economy. Many local stables are used for boarding and recreational purposes and do not impact the agricultural industry significantly in product sales.

Deer: There are several deer farmers in Jefferson County producing a variety of venison types, i.e. fallow deer, buffalo, etc. and breeding stock. At present there is no real data available on the number of producers in Jefferson County or the economic returns this industry generates.

2) Field Crops

Hay: By far the largest acreage crop in the County at 85,000 acres for a total production of 150,500 tons (New York Agricultural Statistics 2000 - 2001). Hay acres and total production can vary greatly from year to year depending on demand for forages and weather conditions. Hay is a dairy and livestock feed in the County and is an export commodity to the feed and mulch hay markets out-of-state.

Corn: The second largest crop produced in the County based on the number of acres grown. In 2000 there were 21,200 acres harvested as corn silage for dairy feed and another 8,300 acres harvested as grain for cattle feed or as a cash crop for a total of 29,500 acres grown. This is in contrast to 1996 when there were 22,800 acres of corn harvested as silage and 10,600 acres harvested as grain for a total of 33,400 acres of corn grown. While total acres and production were down in 2000, most of this was due to a poor crop season which had a major impact on corn acres planted and yield per acre harvested. 1999 data shows total acres for corn above the 1996 levels (33,500 acres) with a greater amount going for corn silage (26,200 acres) and a smaller number of acres harvested for grain (7,300 acres). In recent years, farm expansions in the dairy industry have increased the total number of corn acreage grown for silage feed considerably.

Small Grains: These include oats, wheat, barley, and rye. The County has a combined acreage of about 8,000 acres of small grains yielding a combined yield of about 400,000 bushels of grains and 12,000 tons of straw. These grains are used for a variety of purposes including feed, cover crops, and cash crop income.

Soybeans: The County has about 4,000 acres of soybeans yielding about 140,000 bushels of grain. Soybean grain produced here is used mainly for dairy cattle feed, and some for cash crop income.

Annual Forages: These include several plant species grown for animal feed that are planted on a yearly basis. There are about 3,000 acres of annual forages producing about 24,000 tons of feed annually.

3) Horticultural Crops

Fruits, Vegetables, Flowers and Ornamental Plants make up a very small portion of the total value of agricultural products of Jefferson County. In fact, production is so small that statistics are not readily available for most of these crops. Nursery and greenhouse and other products are 3.6% of the total. Just over 300 acres are planted with these crops on 25 to 30 farms.

Larger operations sell both wholesale and from farm stands. Often the variety of produce at the farm stands is supplemented with other produce purchased wholesale. The smaller producers tend to be part-time and sell through farmers' markets and farm stands.

Sweet corn and strawberries are grown in the largest quantities. Other crops grown in larger quantities include pumpkins, tomatoes, snap beans, squash, peas, raspberries and bedding plants.

4) Maple Syrup and Honey

County maple syrup producers generated 4,091 gallons of syrup in 1990 (Ag.& Markets, 1990), an unremarkable level of production considering the volume produced in Lewis, Clinton, and St. Lawrence Counties. Worth note, however, is the fact that per tap production in the County was the second highest of all New York counties. Jefferson County ranks #1 in the state for the number of bee colonies. There are a total of 1,237 colonies in the County.

AGRI-TOURISM

There is little data available on the impact of agri-tourism in Jefferson County. Some businesses combine product sales along with tourist attraction to generate additional revenue for the business. Other agri-tourism activities allow individual crafters the opportunity to sell their products at markets open to the public.

Agriculture also offers open space and esthetic value to those whom come to the area on vacation. Potential for Bed and Breakfast operations allow another alternative for income that has been taken advantage of in other regions.

While Agri-tourism allows new opportunities for businesses, it also brings with it new challenges. While snowmobilers and all terrain vehicle operators offer financial benefits to the local economy, they can also create farmland problems. Issues dealing with the destruction of crop land and fencing can cause agricultural land owners great cost in repair or replacement of forages or fencing materials caused by damages made from motorized vehicle use.

AGRICULTURAL PROCESSING AND MARKETING

There are two types of processing facilities for converting raw milk into marketable products: fluid milk plants and dairy products processors. The former purchases raw milk from producers, conducts pasteurization and homogenization processes, bottles, and distributes the milk to retail outlets. The latter are producers of dairy products such as cheese, yogurt, and sour cream. In 1987 there were 4 major dairy processors in Jefferson County. Today there are only two. As markets are extremely competitive and there are a small number of operators, production statistics are unavailable. More detailed information on each current processor follows:

- Crowley Foods, Inc., LaFargeville: This processor produces 30% sour cream, 30% yogurt, 30% cottage cheese, and 10% cream cheese. Markets are exclusively regional retail outlets.

- Great Lakes Cheese of New York, Adams: Principal product is cheddar cheese.

AGRIBUSINESS

Jefferson County has a large and varied agribusiness base. Agribusinesses include agricultural lending, equipment dealers, feed dealers, crop input suppliers, veterinary services, milk hauling, agricultural supply dealers and milk processing facilities. Each add to the local economy's well being, and like farm businesses, offer a multiplier effect in the monies turned over and reinvested into the County. The issues these businesses feel are impeding their current situation include: loss of farm customers; high cost of doing business; government regulations; availability of skilled labor; fuel cost; availability of capital; insurance costs; and utility costs (Jefferson County Agricultural Survey, June 2001). Little data is available on agribusiness trends locally. Over the last two years, however, some agribusinesses have closed in Jefferson County.

NATURAL RESOURCES

In 1997 there were 47 farms who reported $725,000 of sales of forest products, excluding Christmas trees and maple products (USDA, National Agricultural Statistics Service,1997). This was up from 1992 where 36 farms reported $241,000 in sales of forest products. The number of farms who reported woodland in 1997 was 598 as compared to 624 in 1992. While some farms may have expanded their land base by purchasing neighboring farms, the total acres of woodland owned by farms also decreased during this period from 49,461 in 1992 to 46,463 acres in 1997.

While the statistics do not specifically define what products are produced from Jefferson County woodlands, farms occasionally log out woodlands for additional income. While this is not a yearly source of farm income, woodlands are generally logged off during periods when prices for lumber are high or when additional capital is needed for the business.

There are a number of small sawmill operations throughout the County that accept raw timber. These mills produce rough lumber, timbers and firewood for sale. This generates an additional source of revenue for local businesses in the region.

Source: USDA, National Agricultural Statistics Service, 1997 Census of Agriculture-County Data, pg. 221 and 228.

While Jefferson County Agriculture isn't directly involved with selling products globally, the effects of foreign trade do have an impact on local prices for goods purchased and sold locally. Presently, with slow economic growth globally and a strong American dollar, foreign purchases of U.S. goods are depressed. (Source: National and Global Agriculture Outlook, United States Department of Agriculture, 2000). The short term impact for agriculture will be weaker prices received by producers. The long term outlook, however, is still very positive.

A few of the factors that will strengthen the demand for U.S. agricultural products include; a larger share of consumers in the future will be eating more meals away from home; increases in consumer food prices are projected to stay below the general inflation rate; a strong projected growth in corn production is expected for use in ethanol production in the United States; and incomes of individuals in developing countries will increase allowing them to increase consumption of meat and other higher valued food products.

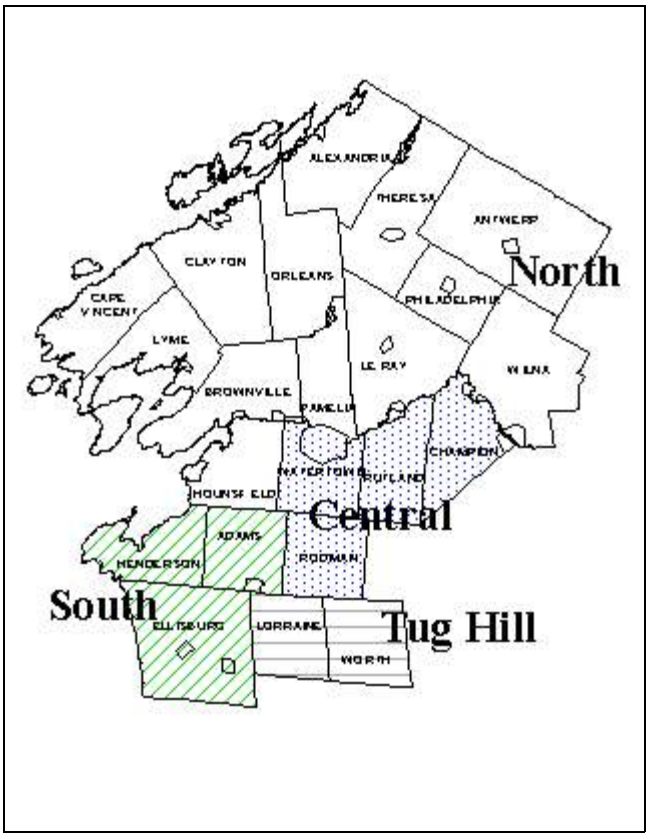
While a number of production agriculture sectors, including a number of small grains and meat production, are projected to grow over the next 10 years due to increased domestic and export demands, others like the dairy industry are expected to show slower growth due to slow domestic demand for dairy products.

Projections are for continued agricultural growth in the United States over the next 10 years. Even with additional land being put into the Conservation Reserve Program and new technology increasing the yields of many grains, there will be a continued demand for agricultural land. Because of this it is anticipated that the need for agricultural land will increase to the point where some land will be brought back into agricultural production.

1) Background

In 2000/2001 the Jefferson County Agricultural and Farmland Protection Board contracted with The Center for Community Studies at Jefferson Community College to survey agricultural property owners in Jefferson County to compile data for an Agricultural and Farmland Protection Plan. The purpose of the study was to determine the attitudes and opinions of people regarding a variety of agricultural and farmland use issues in Jefferson County.

The study included two components. A survey was developed and sent to agricultural property owners to collect statistical data on land use trends and perceptions of property owners of future land uses. The second part of the study was to get landowners' perspectives on data collected at focus group meetings held in Watertown and LaFargeville. The comments from these focus group meetings were then incorporated into the final document found in the appendix of this plan. While the survey tool covers a broad range of topics which can be used to determine other agricultural needs in Jefferson County, only specific information dealing with land use trends and farmland protection in the County are highlighted here.



2) Agricultural Sectors:

To better evaluate land use trends in this study, Jefferson County was divided into different regions (sectors) based on similar soil types and land use patterns. Data from the Jefferson County Agricultural Survey compared each of these sectors to each other as well as looking at Jefferson County as a whole.

3) Availability of Farmland

Countywide the perceived availability of farmland is high whether for renting or to purchase. Yet when the County is broken down by different regional sectors we can see that in the southern sector, agricultural landowners perception is that land is more difficult to purchase or rent, compared to northern or central Jefferson County where land appears to be much more available.

Perceived Availability of Farmland

Is farmland generally available in your area?

All Farms

	Respondents	Yes		No		Don't Know	
		#	Percent	#	Percent	#	Percent
For Rent	252	154	61.1%	48	19.1%	50	19.8%
For Purchase	231	110	47.6%	54	23.4%	67	29.0%

Perceived Availability of Farmland

Is farmland generally available in your area?

By Sector (Tug Hill omitted due to small number of responses)

	South			Central			North		
			% Don't			% Don't			% Don't
For Rent	28.3 %	43.5 %	28.3 %	65.2 %	17.4 %	17.4 %	71.0 %	11.5 %	17.6 %
For	22.0 %	53.7 %	24.4 %	47.7 %	25.0 %	27.3 %	55.6 %	13.3 %	31.1 %

4) Land Sales

Over the next five years 11.7% of all land owners surveyed said it was very likely they will sell agricultural land. Combined with those who are somewhat likely to sell, there is potential for 30% of those who responded to sell land that is presently designated as agricultural.

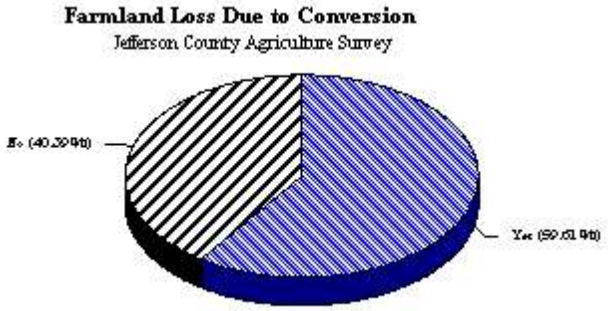
Likelihood of Selling Land in the Next Five Years (all landowners)		
	All Farms	
	Number	Percent
Very Likely	61	11.7 %
Somewhat Likely	98	18.9 %
Not Likely	361	69.4 %
Total Responses	520	

Likelihood of Selling Land for Non-agricultural Purposes Within the Next Ten Years (Landowners actively engaged in farming)		
	All Farms	
	Number	Percent
No	152	59.6 %
Yes	26	10.2 %
Possibly	77	30.2 %
Total Responses	255	

Over the next ten years 40% of the responses who stated they were actively engaged in agricultural production stated that they would (10.2%) or possibly would (30.2%) sell their agricultural land for non-agricultural purposes. One limitation to this survey in collecting the information was getting an estimate from land owners on the amount of land they might potentially convert from agricultural use. Information gathered from producers who have sold agricultural land over the past five years reported total acreage sold out of agricultural production was 996 acres.

5) Land Conversion

Do you think important farmland is being lost in Jefferson County due to the conversion to non-agricultural use?		
	All Farms	
	Number	Percent
Yes	152	59.6%
No	103	40.4%
Total Responses	255	



If yes, is the loss of concern to you?		
	All Farms	
	Number	Percent
Yes	112	76.7 %
No	34	23.3 %
Total Responses	146	

Do you think important farmland is being lost in Jefferson County due to the conversion to non-agricultural use? (All farms - by Sector)								
	South		Central		North		Tug Hill	
	Number	Percent	Number	Percent	Number	Percent	Number	Percent
Yes	16	34.8 %	35	76.1 %	91	60.3 %	8	100.0 %
No	30	65.2 %	11	23.9 %	60	39.7 %	0	0.0 %

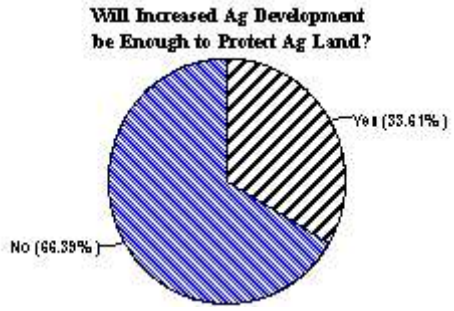
Agricultural producers' perception to the loss of agricultural farmland to non-agricultural use is high. The South Sector was the least likely to feel that important farmland would be lost to non-agricultural use probably due to the aggressive use of land in that area for agricultural production. Of those farm landowners who believed that agricultural land was being converted to non-agricultural use, over two thirds of them were concerned of the losses.

6) Agricultural Land Development

76% of the producers said no when answering whether the sale or development of land near them made it more difficult for them to farm. This contradicts what is typically heard from farms dealing with nuisance complaints from neighbors complaining about noise, dust, odor and water quality issues.

Has the sale or development of land near you made it more difficult to farm?		
	All Farms	
	Number	Percent
Yes	60	23.9 %
No	191	76.1 %
Total Responses	251	

Do you believe greater agricultural development will be enough to protect agricultural land from development?		
	All Farms	
	Number	Percent
Yes	82	33.6 %
No	162	66.4 %
Total Responses	244	



When agricultural land owners were asked whether greater agricultural development would be enough to protect agricultural land from development, two thirds of those responding said no. It is difficult to say whether this would be true or not without looking at areas that have experienced agricultural development. Few regions have seen this type of growth in the past. However, the perception from agricultural land owners in Jefferson County is that agricultural development will not be enough to protect land from being developed.

7) Impediments to Farming

Do you see any of the following as impediments to your farming?				
	All Farms			
	Yes		No	
	Number	Percent	Number	Percent
Government regulations	158	66.7 %	79	33.3 %
Residential development	103	45.6 %	123	54.4 %
Neighbor relations	96	42.3 %	131	57.7 %
Environmental regulations	159	68.2 %	74	31.8 %
Land use regulations	128	55.7 %	102	44.3 %
Fewer Ag support services	139	61.5 %	87	38.5 %

When looking at some specific issues perceived to have an impact on agriculture in Jefferson County, residential development and neighbor relations were less of an issue than regulations landowners are needing to deal with. It could be hypothesized that as regulations continue to have an impact on agricultural land use and production practices, alternative uses for that land including the sale of agricultural land out of agricultural production could occur.

8) Agricultural Programs

For the most part, the majority of landowners surveyed were not familiar with a number of different agricultural land use programs. Considering present and future issues dealing with the preservation and protection of agricultural lands, understanding how these programs work and how they may fit in individual operations will become more important in the future.

Are you familiar with the following programs?				
	All Farms			
	Yes		No	
	Number	Percent	Number	Percent
Purchase of Development Rights	72	30.0 %	168	70.0 %
Conservation Easements	122	51.1 %	117	48.9 %
Right to Farm Law	131	53.0 %	116	47.0 %
Conservation Reserve Program	125	51.2 %	119	48.8 %
Local Land use Regulations	118	49.0 %	123	51.0 %
Tile Drainage Revolving Loan	70	29.1 %	171	70.9 %

CHALLENGES FACING JEFFERSON COUNTY AGRICULTURE

With a positive economic outlook for the agricultural sector over the next ten years, including a growing population both locally and worldwide, there is good potential for strong growth in agricultural production in the future. Jefferson County has many positive attributes that support future growth in agriculture. These include a good transportation infrastructure, adequate water resources, an adequate climate for a variety of agricultural products, and many local agribusinesses that help support production agriculture. In order for the agriculture industry in Jefferson County to grow in the future, issues dealing with farmland protection and preservation need to be addressed. These issues include:

- ⇨ Jefferson County dropped from 9th in total value of agricultural products sold in New York State in 1992 to 12th in 1997.

- ⇨ Jefferson County has been stagnant in growth in the value of agricultural products sold from 1982 through 1997.

- ⇨ Jefferson County's population and number of housing units grew from 1990 to 2000 and is likely to continue to grow due to recent economic development opportunities in the County and in the state. This growth was greater in the rural areas of the County than in the City and villages. This growth trend will continue to increase development pressure on agricultural land.

- ⇨ Approximately 28.5% of Jefferson County's agricultural land was removed from agricultural production from 1969 to 1997.

- ⇨ Approximately 56% of the land in agricultural production is presently in an agricultural district.

- ⇨ Approximately 35% of the soils in Jefferson County are well suited for all types of cultivated crops, legumes, grass and hay production.

- ⇨ The dairy industry continues to grow with a larger concentration in the southern part of the County where land availability is becoming tighter due to farm expansions.

- ⇨ Beef production is showing some growth while other types of livestock production are on the decline. These types of operations are more dominant in the northern part of the County and may have a greater economic development benefit on the grassland type soils in the future.

- ⇨ Perceived availability of farmland to rent or purchase is lower in southern Jefferson County compared to other regions where the availability is much greater.

- ⇨ 40% of landowners stated they were actively engaged in agricultural production and that they would (10.2%) or possibly would (30.2%) sell their agricultural land for non-agricultural purposes over the next ten years.

- ⇨ Almost 60% of landowners think important farmland is being lost in Jefferson County due to the conversion to non-agricultural use. The South Sector was the least likely to feel that important farmland would be lost to non-agricultural use probably due to the aggressive use of land in that area for agricultural production.

- ⇨ The perception from agricultural land owners in Jefferson County is that agricultural development will not be enough to protect land from being developed.

- ⇨ Residential development and neighbor relations are less of an issue than regulations landowners are needing to deal with.

- ⇨ For the most part, the majority of landowners surveyed were not familiar with a number of different agricultural land use programs.

1) Determination of the Need for Protecting Agricultural Land in Jefferson County

While Jefferson County agriculture has the opportunity to help meet the growing food demands of the future, much of the data shows a steady decline in the amount of land in agricultural production since 1969. While it can not be fully determined from this study to what extent land is either being left idle or being developed, it can be presumed that with the potential for population growth in the County, the number of housing lots on open land presently for sale, the number of new rural housing developments occurring and agricultural economic conditions that cause landowners to consider selling land to generate needed capital for business or personal needs, there is a present and future need for protecting agricultural lands in Jefferson County.

2) Determination of What Agricultural Lands in Jefferson County are in Need of Protection

Agricultural lands in Southern and Central regions of Jefferson County, as designated in the Jefferson County Agricultural Survey, and whose soils are classified as highly productive, should be recognized as lands having the greatest need to be preserved and protected in Jefferson County. While land development in this region is presently minimal and the opinion of local landowners is that there is little conversion of land going out of agricultural production, these soils are well suited for housing construction and other types of development.

Agricultural lands in Northern and Tug Hill regions of Jefferson County, as designated in the Jefferson County Agricultural Survey, should be recognized as lands having a secondary need to be preserved and protected as agricultural lands in Jefferson County. While soil classifications designate them as less productive, as future food needs increase, these lands have the opportunity to be developed in both traditional and alternative types of livestock production.

The objectives and strategies outlined below are the recommendations of the Jefferson County Agricultural and Farmland Protection Board. The goal in implementing these strategies is to protect and conserve viable agricultural land and improve the overall profitability of the agriculture industry in Jefferson County.

1) Promote Agricultural Protection Programs

Increase local agency and organization involvement in promoting and enrolling land owners in Agricultural Districts. While presently there is limited property tax savings to be enrolled in an Agriculture District, increasing the number of property owners will potentially benefit all individuals within the district if land use issues arise.

Have all townships in Jefferson County acknowledge Jefferson County's Right to Farm Law. In order to recognize agriculture as a viable industry, town boards need to acknowledge that agriculture is located within their township and understand it's importance to their community. When issues come up town officials also need to know what resources are available to them to deal with such problems. Informational brochures need to be developed and made available at town offices which can be offered to the public and agricultural land owners explaining their rights under the Jefferson County Right to Farm Law.

Encourage participation in established land resource protection programs and investigate future initiatives that are proven to maintain the viability of agricultural land. Presently there are a number of agricultural programs available to protect and conserve agricultural land. These include: Conservation Reserve Programs, Right to Farm, and the Tile Drainage Revolving Loan Program. Many land owners do not know these programs are available to them and therefore the programs need to be promoted more throughout the County. Other programs like Conservation Easements and Purchased Development Rights may have the potential to protect agricultural land in the future but need to be investigated further to determine their feasibility in Jefferson County.

2) Increase Educational Awareness Programming in Agriculture

Develop an educational outreach program using existing resources to educate agricultural and non-agricultural communities about what the social and economic value of agriculture and natural resources is in the County.
The program will encourage the introduction of curricula in schools that teaches students about agriculture and natural resource topics that impact their daily lives. Topics dealing with production agriculture practices using commercial fertilizers and pesticides will help show the public why these products are used and how they are controlled by regulatory agencies. Other activities will include developing local farm tours for students and the general public as well as promoting a positive image of local businesses and resources through greater media coverage.

Continue to inform county officials about the economic importance of agriculture in Jefferson County. Seek continued County support to local agriculture programs that both support and promote the agriculture industry in the County.

Educate landowners about agricultural land use programs that are available in Jefferson County. Presently many land owners do not know about different land use programs that are available to them. Information explaining different agricultural land use programs could increase enrollment in these programs and improve the productivity and preservation of agricultural land in Jefferson County.

3) Support the Local Dairy Industry

Support the local dairy industry and look for ways to help adopt new technologies to maintain the viability of the industry. The dairy industry is the major source of agricultural revenue for Jefferson County. Considering the economic multiplier effect both dairies and dairy manufacturing offer a local economy, it is important to help to continue to develop this industry in the future. Issues dealing with odor and noise from dairy operations have caused conflicts and will continue to challenge producers to figure out different ways to manage their business. Regulations dealing with nutrient management have added additional costs in how these producers do business. It will be necessary to determine ways to deal with these issues in order to help secure the viability of this industry in the future.

4) New Technologies and Product Development

Promote agricultural research in Jefferson County and expand upon these efforts to encourage new product and market development in the region. The County's available land resource and climate make grazing animals, such as dairy, heifer replacements, beef, sheep, goats, fallow deer, buffalo, and free-range poultry, ideal. While there has been a steady increase in growth in the beef industry in Jefferson County since 1987, lands in northern Jefferson County offer additional opportunities for expanding traditional and nontraditional crop and livestock production in the future.

Evaluate specific microclimates and soils in Jefferson County, especially along Lake Ontario and the St. Lawrence River, which may have the potential for alternative types of agricultural products. Small fruit production such as strawberries and raspberries are well adapted to this climate. Yet along the St. Lawrence River there are micro-climates that may allow other types of specialty crops to be grown. Determining the potential for these crops may help to further develop agricultural land along the St. Lawrence.

Research what types of agricultural products may be economically viable in Jefferson County. The study will look at different regions of the County where individual products can be produced, costs and returns of the product, marketing potentials or challenges that need to be overcome, and possible sources of funding that are available to start production. A summary of the results can be included into a marketing package that can be distributed to individuals looking to move to Jefferson County.

5) Capital Financing Programs

Develop a data base of both public and private funding sources that land owners can gain access to that are less traditional sources of capital. Businesses that rely on land resources are often very capital intensive. Traditional sources of capital may not always allow the flexibility to help develop new business ideas. Having access to alternative funding sources could help land owners gain capital that they may not know of or had access to in the past.

Continue to support and increase monies available to be used as a capital fund to offer producers low interest rate loans to install tile drainage on their farms. Research has shown that with improved drainage soils can be worked and planted earlier in the spring, which will potentially increase the yields of many crops grown. The increased productive capability of the soil resources allows for a greater economic return to agricultural producers.

Utilize the information found in the Agriculture and Farmland Protection Plan to apply for and obtain state funding for Agricultural and Farmland Protection Implementation Grants to implement the goals and objectives listed above.

6) Marketing

Promote Jefferson County as a place to develop other types of agricultural production enterprises. While dairy farming is the primary agricultural enterprise in Jefferson County, efforts need to be made to encourage other types of agriculture businesses that are either present or could be established in the County.

Increase the marketing and promotion of locally produced products and businesses by creating new farmers' (growers') markets and encouraging greater use of existing markets. Developing these types of markets will help educate consumers about where their food comes from as well as being a tourist attraction in small communities. It will also help develop new businesses which could potentially utilize land resources already available in Jefferson County.

Provide education and training opportunities for producers of agricultural products in the process and techniques of marketing.

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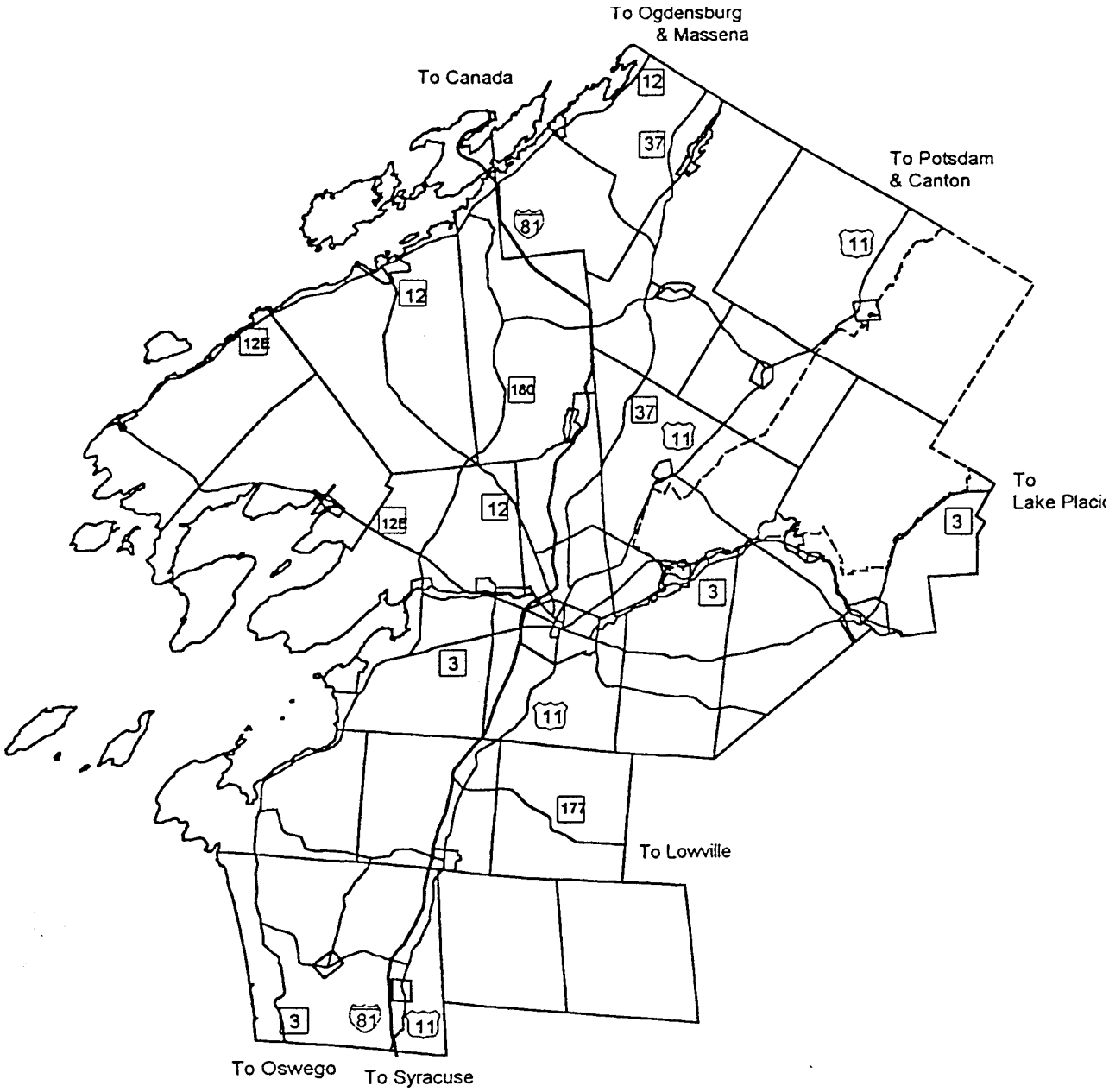
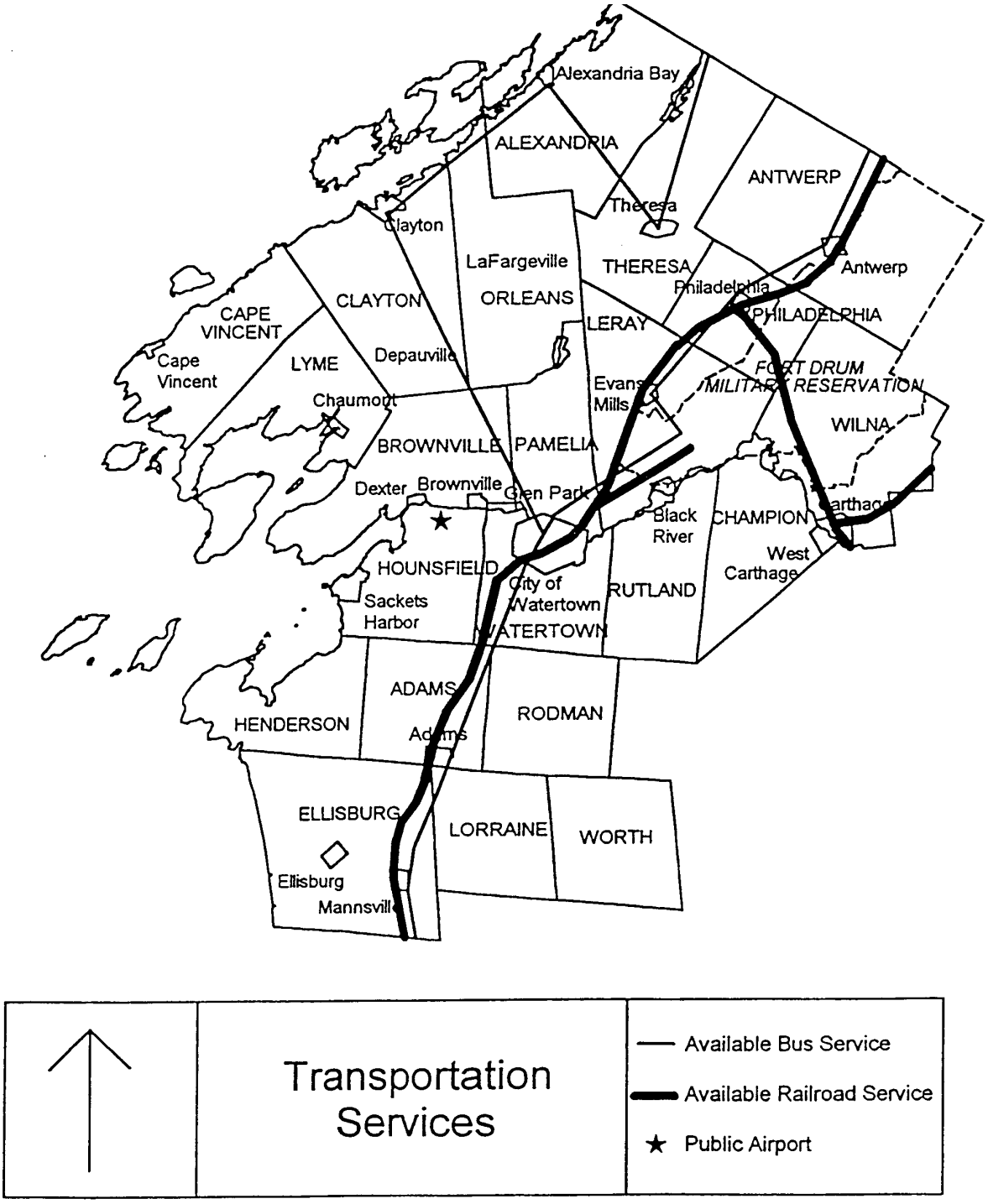
Appendix A - Jefferson County State Highway Map

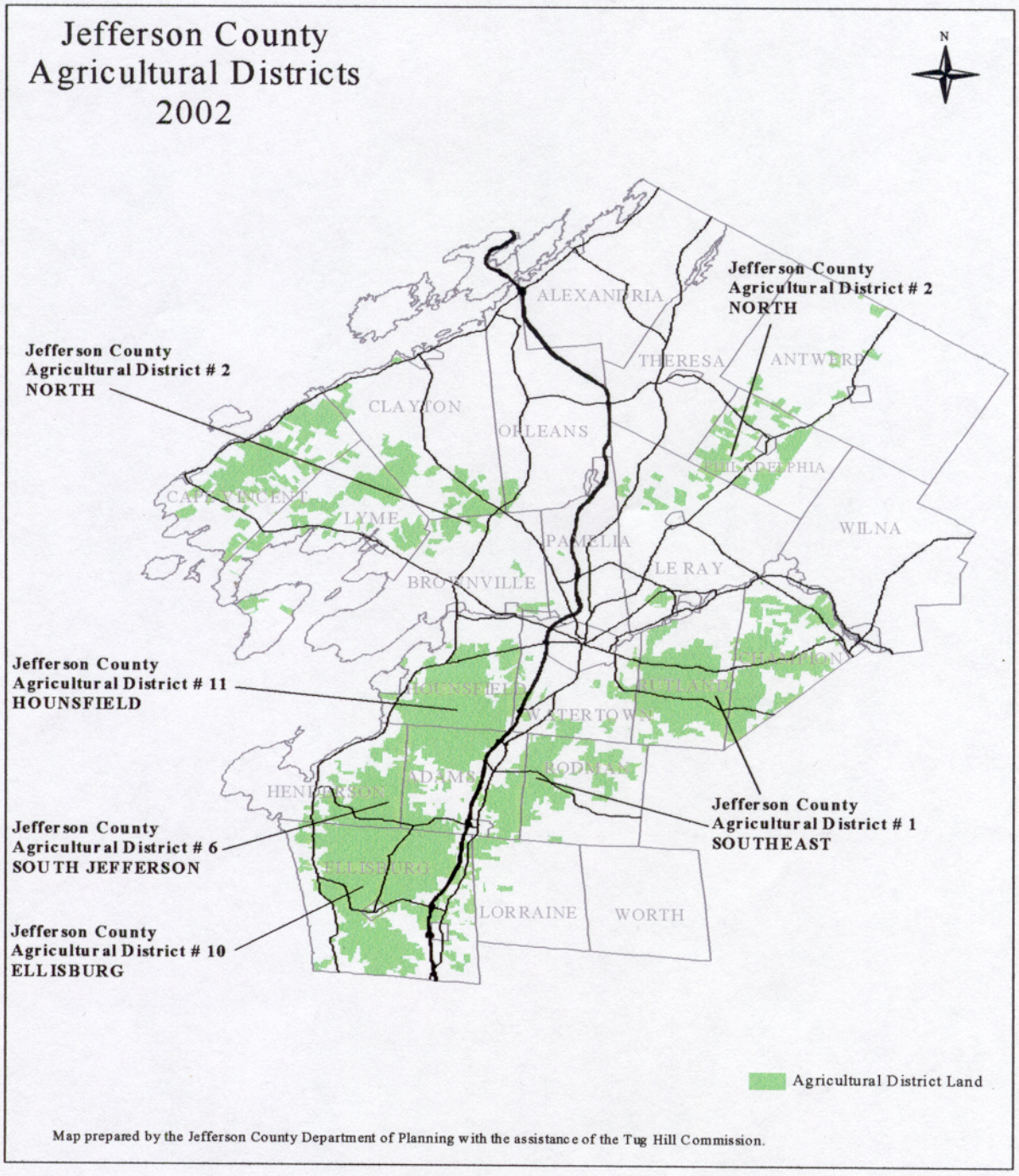


↑	Major Roads	Interstate Highway US Highway State Highway

Appendix B - Jefferson County Transportation Services



Appendix C - Jefferson County Agricultural Districts Map



Appendix D - National and Global Agriculture Outlook

National and Global Agriculture Outlook
Summary of Projections
Source: United States Department of Agriculture Office of the Chief Economist Staff Report WAOB-2002-1 **USDA Agricultural Baseline Projections to 2011**

In the initial years of the baseline projections, slow U.S. and global economic growth and a continued strong U.S. dollar provide a weak backdrop for the agricultural sector. In addition, large world production and increasing global stocks have pressured prices for some agricultural commodities, such as soybeans and cotton. In contrast, a reduction in global stocks of wheat and coarse grains since the late 1990s has strengthened prices for those grains. U.S. agricultural export value and market cash receipts to U.S. farmers have improved since the late 1990s when large global production and weak global demand pushed prices and trade down. Government payments to the sector, through marketing loan benefits and additional funds provided through emergency and disaster assistance legislation, have added to farm income during this period. However, lower farm income is projected over the next several years, largely due to a reduction in direct government payments from the high levels of the past several years, reflecting the baseline's assumption of no further ad hoc government assistance to the sector.
Longer run developments in the agricultural sector reflect strengthening domestic and international macroeconomic growth. While export competition and a strong U.S. dollar are projected to continue, improving world economic growth, particularly in developing countries, provides a foundation for gains in trade and U.S. agricultural exports. This results in rising market prices, increases in farm income, and improvement in the financial condition of the U.S. agricultural sector. Consumer food prices are projected to continue a long-term trend of rising less than the general inflation rate. The trend in consumer food expenditures towards a larger share for meals eaten away from home is expected to continue.

Macroeconomic Assumptions
The outlook for the world economy assumed in the baseline is characterized by a significant U.S. and global economic slowdown through 2002, followed by a return to stronger growth for subsequent years. World real GDP growth in the baseline is at 1.6 percent for 2001 and 2.0 percent for 2002, compared with an annual average of 2.7 percent in the previous decade, before strengthening to over 3 percent a year in 2003-2011. These global economic growth assumptions mirror growth for the United States and reflect the increasing dependence of the world economy on the United States, the largest economy and the largest single market for foreign goods. The U.S. economy, therefore, is crucial for U.S. agricultural prospects through its role in spurring world growth, global agricultural demand and trade, and U.S. agricultural exports.
Most regions of the world are projected to register economic growth above long-term averages. A significant narrowing is projected in the differential between the high growth regions, such as Asia, and the lower growth regions of Latin America, Africa, and the transition economies, providing a broad base for global economic gains.

Importantly for agricultural demand, overall economic growth in developing countries rebounds to over 4 percent for most of the baseline. This pickup is important for global agricultural demand because many developing countries have incomes at levels where consumers diversify their diets to include more meats and other higher valued food products, and where consumption and imports of food and feed are particularly responsive to income changes. Projected growth in the transition economies (countries of the former Soviet Union and Central and Eastern Europe) of about 3.8 percent over 2003-2011 is significant in comparison to the economic contraction of the 1990s. Economic growth in developed countries is projected to rebound to 2.6 percent for the second half of the baseline, although relatively sluggish growth continues for Japan. U.S. growth reflects increases in the labor force and strong gains in productivity because of continued benefits from telecommunications- and information-related technology.

The U.S. dollar is projected to remain strong throughout the baseline, a negative factor for U.S. agricultural exports. Typically, a slowdown in the U.S. economy, as occurred in 2001, would be expected to result in a depreciation of the dollar. However, because the U.S. dollar is a reserve currency in so many countries and because of the critical role of the U.S. economy in the world, the global slowdown has resulted in continued inflows of capital to the United States as a safe haven, keeping the dollar strong. As U.S. and global economic activity rebound in the baseline, the dollar stays strong as capital flows into the United States are attracted by relatively high financial returns.

Oil prices are assumed to decline in the initial years of the baseline from the high levels reached in 2000, reflecting reduced demand associated with the global economic slowdown. Moderate gains in oil prices at slightly more than the general inflation rate are then assumed from 2004 through the remainder of the baseline based on the assumption that new oil discoveries along with new technologies for both finding and extracting oil will allow for substantial growth in demand without significant energy inflation. Also, economic growth has become less directly dependent on energy as the economy has changed from producing goods to a process much more dependent on information and communication technologies, particularly in North America and Western Europe. While projected growth of real world oil prices should not notably hinder global GDP growth, the agricultural sector is more negatively affected by higher oil prices because of its relatively higher use of fuel and energy-based inputs such as fertilizer.

Crops

Baseline projections for crops reflect an assumption of a continuation of current farm policy, primarily provisions from the 1996 Farm Act. Under an extension of current law, several major U.S. field crops continue to receive marketing loan benefits during the projection period. Soybeans receive these benefits in the early years of the baseline, and rice and cotton receive benefits for the entire period.

Slow global economic growth through 2002 and a strong U.S. dollar provide a weak backdrop for the agricultural sector early in the baseline. In the longer run, more favorable global economic growth supports increases in consumption, trade, and exports for most U.S. field crops, although gains in exports are constrained by a strong U.S. dollar and by continued strong trade competition.

Planted acreage for the eight major U.S. field crops (corn, sorghum, barley, oats, wheat, rice, upland cotton, and soybeans) rises to about 257 million acres by 2011, somewhat less than the recent high level of plantings of 260.5 million acres attained in 1996. Planting flexibility of current agricultural legislation facilitates acreage movements by allowing producers to respond to market prices and returns, augmented by marketing loan benefits in low price years. Marketing loan benefits influence the aggregate level of plantings as well as the cropping mix in the early years of the baseline when prices for some crops are relatively low. Projected acreage gains in the longer term reflect land drawn into production based on strengthening market incentives as world demand grows. Yield gains for many crops mitigate some of the need for increasing total land use. The baseline assumes that the amount of land enrolled in the Conservation Reserve Program will gradually build from 33.7 million acres in fiscal year 2001 to its maximum level authorized in the 1996 Farm Act of 36.4 million acres in 2005 and remain at that level for the rest of the projection period.

The domestic market is the main component of use for most major field crops. However, the export market is projected to increase in importance for several commodities. Gains in projected disappearance for wheat and sorghum are driven by exports, with U.S. trade showing larger absolute increases and growth rates than domestic demand. After an initial decline, U.S. wheat exports rise steadily in the baseline, although continued competition holds the U.S. trade share below levels of the late 1990s. Sorghum export gains reflect increasing trade with Mexico. Exports of corn grow at faster rates than its domestic use, but absolute increases in domestic corn use are larger than trade gains, reflecting the relative size of these utilization categories. The corn sector faces strong competition in global trade from Argentina, muting U.S. corn export gains somewhat.

Projected consumption increases for soybeans, soybean oil, and soybean meal, rice, barley, and oats are driven mainly by domestic use. Growth in domestic consumption for these crops and crop products is larger than exports in both absolute and percentage terms. Exports of soybeans and products have larger gains in the initial years of the baseline as low market prices slow foreign production somewhat and encourage domestic crushing, with U.S. producers receiving marketing loan benefits. As prices strengthen, however, foreign production rises further, particularly in South America, and increased competition leads to smaller gains in U.S. soybean exports. U.S. rice exports remain strong in the early part of the baseline, a result of declining price differences over major competitors in the global market and abundant U.S. supplies, but exports decline in the second half of the projections as U.S. rice prices increase faster than world prices, making U.S. rice exports less competitive in some markets.

Domestic demand for many crops is projected to grow faster than population. Strong projected gains in corn used for ethanol reflect bans on MTBE in many States. Increases in domestic soybean crush continue to reflect growth in poultry production and demand for soybean meal throughout the baseline. Growth in domestic use of rice reflects a greater emphasis on dietary concerns and an increasing share of the U.S. population of Asian and Latin American descent. In contrast, gains in domestic food use of wheat in the baseline are generally consistent with population growth. Cotton disappearance rises in the early years of the baseline as global consumption expands, but then declines through the end of the projections. Domestic mill use falls, in part due to the full

phaseout of the Multi-Fiber Arrangement's textile and apparel import quotas scheduled for 2005. Cotton exports benefit from Step 2 payments and remain well above mill use. Nonetheless, after initially holding at 10 to 10.5 million bales, cotton exports decline for the rest of the projections due to strong foreign competition.

The ratios of ending stocks to use decline in the baseline for corn, wheat, soybeans, and rice, with nominal prices rising. The stocks-to-use ratio for cotton declines from recent high levels and becomes relatively stable towards the end of the projections.

Livestock

Trends toward larger and more commercialized livestock and dairy systems continue throughout the baseline. Relatively low grain and soybean meal prices in the initial years of the projections encourage livestock sector expansion, although biological lags in the production process and poor forage conditions of recent years delay higher output for beef in the near term. In the longer run, moderate feed price increases through much of the baseline, replenishment of forage supplies, low inflation, domestic demand increases, and gains in meat exports are expected to contribute to producer returns that encourage higher total red meat and poultry production. Although a growing proportion of production will be poultry, poultry production gains will slow due to maturity of the sector.

Beef cattle inventories have been held down by droughts and poor forage conditions over the past several years, which have encouraged more heifers to be placed in feedlots rather than retained for calving even as cattle returns have improved. The length of the biological lag is likely to prevent beef cow herd expansion before 2004-2005. The cattle herd rises from a cyclical low near 96 million head in 2003-2004 to about 104 million head by the end of the projections. Shifts toward a breeding herd of larger-framed, higher-grading cattle and heavy slaughter weights partially offset the need for further expansion of cattle inventories. The beef production mix continues to shift toward a larger proportion of higher-quality fed beef, with almost all steers and heifers being feedlot fed. Beef production also continues to move toward a higher graded product being directed toward the export and domestic hotel-restaurant markets. The United States remains the primary source of high quality, fed beef for export, largely to Pacific Rim nations. The United States becomes a net beef exporter near the end of the baseline.

The pork sector will continue to transform into a more vertically coordinated industry with a mix of production and marketing contracts. Increased vertical coordination in pork production will lower production costs and improve pork quality and product consistency, resulting in timely production of pork products with characteristics desired by domestic and foreign consumers. Larger, more efficient pork producers will market a greater percentage of the hogs over the next 10 years. The restructuring of the Canadian and U.S. pork sectors will continue the development of an integrated North American pork industry. With a more vertically coordinated industry structure, the hog cycle is dampened. Pork production rebounds in 2002 and 2003 with moderate expansion through the rest of the baseline. The United States is an important net pork exporter, in part reflecting land availability and environmental constraints in a number of competing countries that limit their production gains. Prospects for long-term growth markets for U.S. pork exports remain focused on Pacific Rim nations and Mexico. Canada will increasingly compete for trade in these markets.

Broiler production grows steadily throughout the baseline, but gains slow to only slightly more than population increases by the end of the projections due to the maturity of the sector. The broiler and turkey industries have kept production costs from increasing at the full rate of inflation through technological advances and improved production management practices, including taking advantage of economies of size through increasing horizontal and vertical integration. Although further technological improvements are expected to occur, efficiency gains are likely to be smaller than in the past. Processed products and fast food markets are important sources of domestic growth for the poultry sector. Competition in global poultry markets, where the focus is on low-valued products, holds U.S. poultry exports to moderate gains. Asian imports are projected to expand through the baseline, even with growing domestic broiler production in China. Exports to Mexico and Russia are also expected to increase.

Decreases in real prices of meats combined with increases in real disposable income allow U.S. consumers to purchase more total meat with a smaller proportion of disposable income. Small declines in per capita consumption are projected for beef and pork, while increases continue in per capita consumption of relatively lower priced poultry. Thus, poultry gains a larger proportion of both total meat consumption and total meat expenditures.

Per capita consumption of eggs rises moderately in the baseline. Processed egg products become an increasing part of the egg market, in part due to fast food establishments expanding breakfast items which often incorporate egg products.

Milk production grows despite slowly declining cow numbers as strengthening milk-feed price ratios, improved management, and dairy productivity gains push milk output per cow higher. Productivity gains in the dairy sector will reflect the continued structural shift to larger-sized operations as many traditional dairy farms, particularly smaller operations, will experience income stress and will exit the industry. Domestic dairy demand is expected to show slow growth in the baseline.

Farm Income and Farm Financial Conditions

Over the last several years, net farm income has been maintained at levels near the average of the 1990s mostly because of large marketing loan benefits and additional funds provided by emergency and disaster assistance legislation. With the baseline assuming no further ad hoc government assistance and with production flexibility contract payments scheduled to decline, farm income is initially lower as gains in commodity prices and cash receipts in the sector do not match the reduction in government payments and steady increases in production expenses. Despite some cash flow difficulties in the sector, a strong financial position achieved during the 1990s will help farmers through this period.

In the longer run, the outlook for the sector improves as agricultural demand and exports strengthen and prices rise, leading to gains in farm income and greater stability in aggregate financial conditions. After holding relatively flat in 2002 through 2005, net farm income gradually moves upward for the rest of the baseline to more than $57 billion by the end of the projections. As direct government payments fall and then level off, the agriculture sector increasingly relies on the marketplace for its income. Government payments, which represented nearly 10 percent of gross cash income in 2000, account for only about 2.5 percent of gross cash income in the latter part of the projections. Both crop and livestock receipts are up in nominal

terms due to larger production and higher prices. Production expenses increase in the baseline, with expenses for non-farm origin inputs rising faster than expenses for farm-origin inputs. Cash operating margins tighten somewhat early in the projections, with cash expenses increasing from 75 percent of gross cash income in 1998-2001 to 78-79 percent over the next several years, before falling back to 76 percent later in the baseline.

With reduced farm income and cash flow over the next few years, debt management will be crucial to the financial condition of the agricultural sector, as farm asset values will rise only moderately in the near term. Lenders will factor farmers' reduced cash flows available for debt repayment into more restrained lending decisions, and farmers will be less willing to undertake credit-financed expansion. In the longer run, increasing farm incomes and relatively low interest rates assist in asset accumulation and debt management, thus leading to improvement in the financial condition of the farm sector. Farm asset values strengthen in response to improving farm income prospects. Farm debt rises as well, but at a slower rate than asset values. Thus, the debt-to-asset ratio for the sector declines after 2003, falling to about 15 percent at the end of the baseline, which compares to the high levels of over 20 percent in the mid-1980s.

Food Prices and Expenditures

Retail food prices in the baseline are projected to rise less than the general inflation rate, continuing a long-term trend. The largest price increases generally occur among the more highly processed foods, such as cereals and bakery products. Retail prices of these foods are related more to the costs of processing and marketing than to the costs of farm commodities. Expenditures for meals eaten away from home account for a growing share of food spending, reaching nearly 50 percent of total food spending by the end of the baseline.

Agricultural Trade

Global trade and U.S. agricultural exports are projected to grow during the next 10 years as stronger U.S. and international economic growth starting in 2003 leads to improving long-run demand prospects and as continued progress is made toward freer trade.

Projected growth in global wheat and coarse grains trade is particularly strong compared with recent performance, and cotton trade is projected to improve from the contraction of the 1990s. The expansion of grain, soybean, and soybean product trade is broad based, driven by rising incomes in developing regions, diet diversification, and increased demand for livestock products and feeds. The phase out of the Multi-Fiber Arrangement by 2005 is expected to boost demand for raw cotton in developing countries, while gradually shifting demand in developed countries from raw cotton to processed cotton products (textiles and apparel).

Global trade in soybeans and products is projected to continue growing, but at a slower rate than the rapid growth of the 1990s. Continued strong gains in developing-country demand for feed protein is projected to be partly offset by reduced demand in the EU that results from slowed livestock output and increased substitution of grain for protein feeds following Agenda 2000 reforms. Growth in soybean oil trade is projected to be slower than the very high rate achieved in the 1990s, due to increased crushing in developing countries and competition from other oils, particularly palm oil.

U.S. export volume is projected to increase for wheat, coarse grains, soybeans, and soybean products, but decline for rice and cotton. For wheat, continued competition holds the U.S. trade share below levels of the late 1990s. For coarse grains and soybean and soybean products, U.S. exports expand more slowly than world trade, due in part to strong competition in these markets. U.S. cotton export volumes remain strong through the baseline, but decline gradually in the second half of the decade due to tighter U.S. exportable supplies and rising foreign production. U.S. rice exports are expected to fall over the baseline period as domestic demand outpaces U.S. production. U.S. exports of soybeans and products grow at a slower rate than in the 1990s, reflecting projected smaller growth in world trade and increasing competition from Argentina and Brazil.

Global meat trade and U.S. meat exports are projected to grow only moderately in the near term, partly a result of the slowdown in world economic growth. All meats benefit from a strengthening of global economic growth after 2002. Japan, Mexico, and Russia show large increases in meat imports over the projection period.

The total value of U.S. agricultural exports is projected to rise to $77 billion by fiscal year 2011, up from about $53 billion in 2001. Both bulk and high-valued products are expected to show strong export growth. High-valued products continue to account for about two-thirds of total U.S. exports, by value. The growth expected in bulk-export value lends strength to total export earnings, in contrast to the average annual decline in bulk commodity export value in the 1990s. U.S. agricultural imports are forecast to grow from $39 billion in fiscal year 2001 to $52.5 billion in 2011, reflecting the expansion of the domestic economy and the dollar's exchange value. The resulting agricultural trade surplus rises to $24.2 billion in fiscal year 2011, up from $13.9 billion in 2001 but still well below the record export surplus of 1996.