

Agricultural Change by Metropolitan Character in Ohio:
1978 to 1997

Prepared by Jeff S. Sharp
Ohio State University Extension

Table of Contents

Highlights	2
Introduction	4
Section 1: Ohio’s Metropolitan Character and Population, 1980 to 1998	6
Section 2: Number of Farms, Land in Farms and Farm Size.....	9
Section 3: Value of Land and Buildings	11
Section 4: Total Agricultural Sales: Crops and Livestock.....	12
Section 5: Emerging Features of Urban Agriculture.....	17
Conclusions	22
References	24

Selected Highlights

The following are highlights of some of the data contained in this report. More detail is found in the main text and tables.

Section 1: Ohio's Metropolitan Character and Population, 1980 to 1998

- Ohio is the seventh most populous state, the 9th most densely populated state and nearly half of its land area (45 percent) is within one of its fifteen metropolitan areas.
- The average population density of Ohio's metropolitan counties in 1990 was 506 persons per square mile, over five times the density of nonmetropolitan Ohio counties with 90 persons per square mile.
- The fastest growing areas of Ohio since 1980 have been those outlying or fringe counties of the state's three largest metropolitan areas (Cleveland, Cincinnati, and Columbus). From 1980 to 1998 these areas have grown approximately 20 percent, while the statewide average growth during this time period has been only 3.7 percent.

Section 2: Number of Farms, Land in Farms and Farm Size

- The number of farms in the state of Ohio declined 23 percent between 1978 and 1997. The rate of decline was nearly the same in metropolitan (24.4 percent decline) and nonmetropolitan counties (22.0 percent decline).
- Since 1978, Ohio's land in farms has declined 10.7 percent, with the greatest declines occurring in the largest metropolitan areas (a 24 percent decline in core counties of the largest metropolitan areas and 15 percent in the fringe counties).
- Farms tend to be smaller in the largest metropolitan areas, with core counties of the largest metropolitan areas having the smallest farms (139 acres per farm) and nonmetropolitan counties adjacent to metropolitan areas having the largest farms (223 acres per farm).

Section 3: Value of Land and Buildings

- Despite smaller average farm size in metropolitan areas, the average, self-reported worth of these farms equals (and even exceeds in some metropolitan regions) the average value of nonmetropolitan farms (\$483,796/farm versus \$376,142/farm).

Section 4: Total Agricultural Sales: Crops and Livestock

- Agricultural sales from livestock and their products declined 40 percent from 1978 to 1997 (in 1997 dollars). Sales from livestock and their products declined 52 percent in metropolitan Ohio during this time period and only 32 percent in nonmetropolitan Ohio.

- In core counties of large metropolitan areas, sales from livestock and their products comprised only 13 percent of total agricultural sales in 1997 while sales from livestock and their products comprised 63 percent of total agricultural sales in nonmetropolitan counties not adjacent to a metropolitan area.
- Mercer, Darke, Wayne and Licking counties accounted for 17.5 percent of the total value of Ohio's agricultural sales in 1997 and 33.0 percent of total livestock sales.

Section 5: Emerging Features of Urban Agriculture

- A majority of Ohio farmers work off farm and have primary occupations other than farming regardless of county metropolitan character. This may help account for why about half of Ohio's farms have total sales less than \$10,000, with many farms being hobbies of individuals with primary employment off-farm.
- The number of Ohio farms with nursery and greenhouse sales has increased 79 percent since 1978. Lake and Lorain counties ranked in the top 50 counties nationally in terms of total nursery and greenhouse sales in 1997.
- In some metropolitan areas of Ohio, particularly in the northeastern part of the state, more than 10 percent of the farms report some agricultural sales directly to consumers.

Ohio Agricultural Change by Metropolitan Character: 1978 to 1997

Prepared by Jeff S. Sharp
Ohio State University Extension¹

This is the second in a series of reports that describes community and agricultural change at the rural-urban interface in Ohio. Secondary data sources, such as the U.S. Census and the Census of Agriculture, provide a variety of demographic data that show the changes occurring at the rural-urban interface. This report focuses on changes in agriculture in relation to the metropolitan character of Ohio counties. The analysis considers change across time from 1978 to 1998. Data come from the 1978, 1987, and 1997 Census of Agricultural, the 1980 and 1990 decennial U.S. Census, and U.S. Census estimates of 1998 population released in March of 1999.

Introduction

The question underlying the data reported here is how does urbanization and increasing numbers of nonfarm rural residences impact the business of farming and the structure of agriculture in Ohio?

After decades of population decline in many U.S. rural areas, the population of some of these areas began to increase in the 1970s (Fuguitt, 1985). This growth trend was tempered by the economic conditions of the 1980s, but has reappeared in the 1990s (Fulton et al., 1997). The spatial expansion of urban areas and the growth of residences and subdivisions in open country areas require farm operators to adapt to increased competition for land as well as proximity to a growing number of nonfarm residents. Some researchers have reported that these changes result in an impermanence syndrome (Berry, 1978), where farm operators begin to disinvest in their agricultural operation in anticipation of their land being converted from farm to urban use. Others suggest there are some positive adjustment strategies that farm operators can adopt which tap into the market potential of being near large numbers of people (Johnston and Bryant, 1987).

A number of descriptive reports produced by the USDA during the last decade have shown national trends of agricultural change which reveal both impermanence and opportunities resulting from metropolitan change (Heimlich and Brooks, 1989; Hines and Rhoades, 1994). For example, Hines and Rhodes (1994) find that a higher proportion of sales in U.S.

¹ The author would like to thank Mark Tucker and Larry Libby for their helpful comments and Greta Wyrick for her assistance in editing the document.

metropolitan areas come from high value production, such as dairy and nurseries, while a higher proportion of sales in nonmetropolitan areas come from lower value production, such as grain, cattle and calves.

Following the example of the USDA descriptive reports of national trends and characteristics of metropolitan and nonmetropolitan agriculture, this analysis focuses on Ohio and devotes extra attention to results from the recently published 1997 Census of Agriculture. There are five sections to the analysis and each section is structured such that it can stand alone as a useful reference sheet describing a particular kind of change or characteristic of Ohio's metropolitan agriculture. Data about individual counties or regions can be gathered from published or on-line Census of Agriculture (<http://www.nass.usda.gov/census/>) and Census of Population documents or upon request from the author.

IMPORTANT DEFINITIONS

Farm: The definition of a farm, used by the census since 1974, is any place from which \$1,000 or more of agricultural products were produced and sold, or normally would have been sold, during the census year (See <http://www.nass.usda.gov/census/>). There have been some changes in the way certain data have been collected or tabulated that impact the comparability of data across census, but in general data are comparable for all censuses since 1974. One farm revenue stream that is not currently captured by the existing data collection instrument are services provided by farms, such as boarding horses, which in some cases can be significant sources of farm revenue.

Metropolitan Area: A metropolitan area is a concept for describing the existence of a geographic regions containing a large population nucleus and the adjacent communities that have a high degree of economic and social integration with the core nucleus of the region.

To qualify as an MSA the following criteria must be met: a city with 50,000 or more inhabitants or a Census Bureau-defined urbanized area (of at least 50,000 inhabitants) and a total metropolitan population of at least 100,000 (75,000 in New England). The county or counties containing the largest city in the MSA are designated the central county(ies). Adjacent counties with at least 50 percent of their population in the urbanized area are also designated central counties of the MSA. Additional "outlying counties" are included in the MSA if they meet certain requirements, such as a high degree of commuting into the central county(ies) or high population density (adapted from explanatory materials located at <http://www.CENSUS.GOV/>).

Section 1: Ohio's Metropolitan Character and Population, 1980 to 1998

Ohio's Population in Comparison to Selected U.S. States

Ohio is one of the most populated states in the U.S., based on population data from the 1990 U.S. Census.

- Ohio is the seventh most populous state in the U.S., following California, New York, Texas, Florida, Pennsylvania, and Illinois.
- Ohio's average population density is 9th highest in the nation, with an average of 244 persons per square mile. The eight states with higher density are all located east of Ohio: New Jersey (890 persons/square mile), Rhode Island (650), Connecticut (594), Massachusetts (568), Maryland (392), New York (331), Delaware (273), and Pennsylvania (260).

Ohio's Metropolitan Character

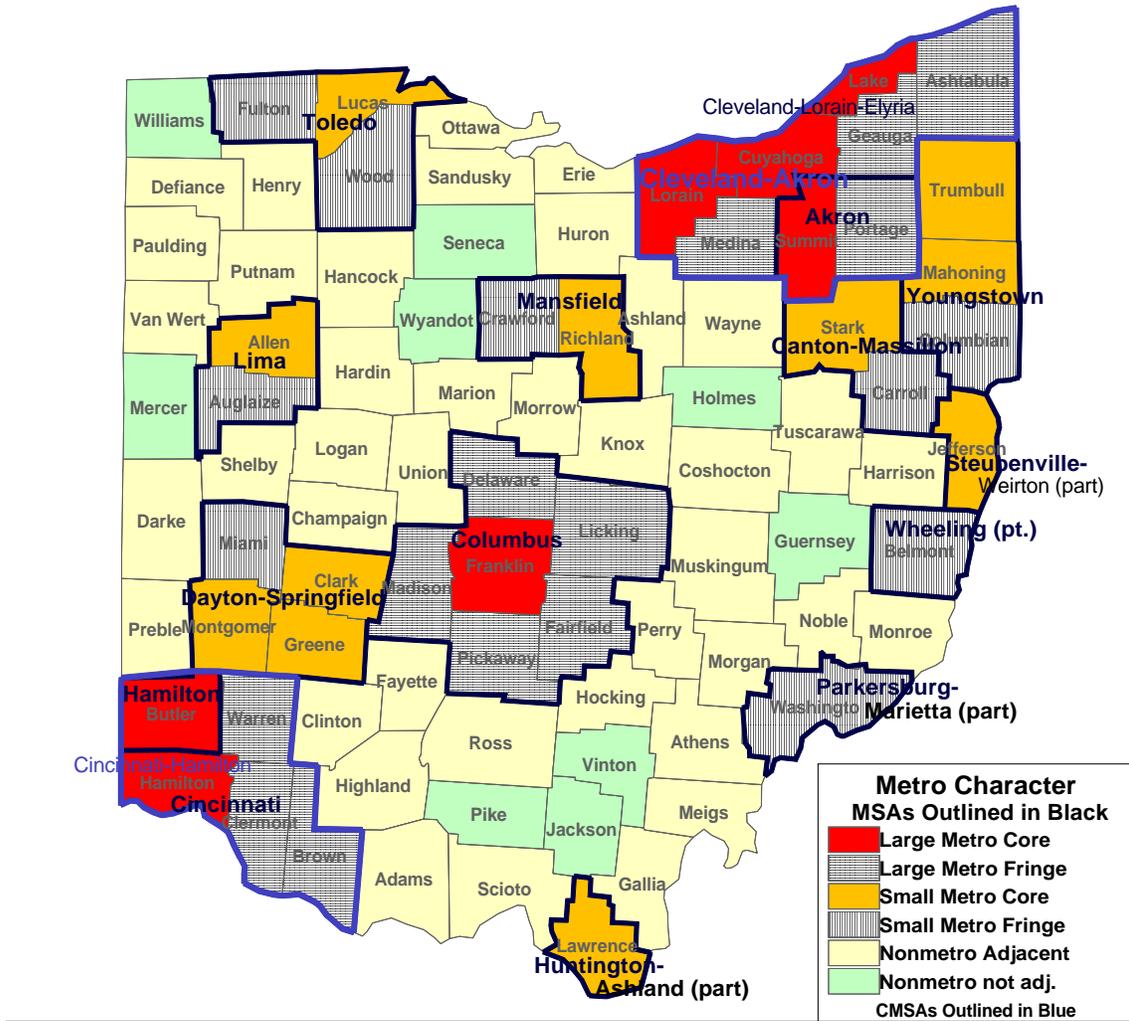
After each census all U.S. counties are designated according to their metropolitan character. The census defines a county containing a central city with a population greater than 50,000 or a county closely tied to the large central city as a **metropolitan county**. The county containing the central city and the associated outlying counties are designated **Metropolitan Areas (MAs)**. There are 15 MAs either wholly or partially located within Ohio.²

For this report, metropolitan counties are further distinguished according to their being part of a large (1 million or more residents) or small (less than 1 million residents) metropolitan area and whether the county is a **central county (core)** or **outlying county (fringe)** of the metropolitan area. A core, metropolitan county contains the metropolitan area's largest city or 50 percent of the county's total population is part of the central city's urbanized area. A fringe metropolitan county has a smaller proportion of its population living in the central city's urbanized area, but the county is closely tied to the central county(ies) in a variety of ways, such as through commuting into the central city. In Ohio there are 19 counties that are part of a large metropolitan area (either Cleveland-Akron, Cincinnati-Hamilton, or Columbus), 9 of which are core counties and 12 being fringe counties.³ Twenty Ohio counties are part of smaller metropolitan areas (metro population less than 1 million), eleven are core counties and 9 are fringe counties. The 49 nonmetropolitan counties are distinguished as either being adjacent to a metropolitan area (40 counties) or not adjacent to a metropolitan area (9 counties). Map 1.1 identifies the 15 metropolitan areas wholly or partially located within the state and the metropolitan character of all 88 Ohio counties.

² Because of the level of interconnections between the Cincinnati and Hamilton metropolitan areas and the Cleveland and Akron metropolitan areas, they are sometimes considered together as **consolidated metropolitan statistical areas**.

³ For this analysis, three counties (Clermont, Licking, and Portage) are treated as outlying metro counties rather than their official census designation of central metro counties due to several factors. These three counties just met several of the criteria for achieving "central" status in the 1990 census (for example, each just met the 50 percent urban criteria) and are comparatively more like outlying metropolitan counties than central metro counties in several other demographic characteristics.

Map 1.1: Ohio Counties by Metropolitan Character



- In 1998, 81 percent of the state’s population was located in one of the 39 metropolitan counties and only 19 percent lived in one of the nonmetropolitan counties (computed from Table 1.1). More than 41 percent of the state’s population is located in one of the seven large, core metropolitan counties.
- The average population density of metropolitan counties is more than five times greater than the density of nonmetropolitan counties, 506 persons per square mile versus 90 persons per square mile (Table 1.2). Large core metropolitan counties have the highest average density in the state, 1,479 persons per square mile, while nonmetropolitan counties not adjacent to a metropolitan area have the lowest density, 71 persons per square mile.

- The estimated population growth between 1980 and 1998 statewide has been 3.7 percent, with the population of large fringe counties increasing more than 20 percent during this period. The population of nonmetropolitan areas grew faster during this time period than the statewide average as well, 6.0 percent in nonmetro Ohio versus 3.7 percent statewide.

Table 1.1: Population Change by Metro Character, 1980, 1990 and 1998 (estimated)⁴

	Counties	1980	1990	1998 (est.)	% Change 1980-98
Metro	39	8,790,877	8,826,069	9,074,696	3.1
Large Core	7	4,511,725	4,532,899	4,623,379	2.4
Large Fringe	12	1,032,539	1,128,964	1,298,527	20.5
Small Core	11	2,632,475	2,558,677	2,525,726	-4.2
Small Fringe	9	614,138	605,529	627,064	2.1
Nonmetro	49	2,006,753	2,021,046	2,134,797	6.0
Adjacent to Metro	40	1,711,080	1,725,210	1,821,342	6.1
Not Adjacent to Metro	9	295,673	295,836	313,455	5.7
State of Ohio	88	10,797,630	10,847,115	11,209,493	3.7

Table 1.2: Population Density, 1990 (persons/square mile)

	Avg. County Density	Minimum County-level	Maximum County-level
Metro	506	67	3081
Large Core	1479	550	3081
Large Fringe	194	71	332
Medium/Small Core	527	136	1358
Medium/Small Fringe	138	67	229
Nonmetro	90	27	302
Adjacent to Metro	94	28	302
Not Adjacent to Metro	71	27	109
State of Ohio	274	27	3081

⁴ 1980 and 1990 population are actual figures determined in the decennial census while 1998 population is a census estimate that is derived from other government sources of local change.

Section 2: Number of Farms, Land in Farms and Farm Size

Number of Farms

- The number of farms in Ohio declined 23 percent (or 20,540 farms) between 1978 and 1997 (Table 2.1). The decline was generally uniform across Ohio (around 23 percent decline), although core counties of the largest metropolitan counties had the largest decline (28 percent) while nonmetro counties not adjacent to a metropolitan area had the smallest decline (18.6 percent).

Table 2.1: Number of Farms by Metro Character

	1978	1987	1997	1978-97
	Number of farms			% change
Metro	37,995	33,876	28,717	-24.4
Large Core	4,139	3,645	2,979	-28.0
Large Fringe	13,512	12,134	10,326	-23.6
Medium/Small Core	10,191	9,227	7,722	-24.2
Medium/Small Fringe	10,153	8,870	7,690	-24.3
Nonmetro	51,136	45,401	39,874	-22.0
Adjacent to Metro	42,247	37,280	32,642	-22.7
Not Adjacent to Metro	8,889	8,121	7,232	-18.6
State of Ohio	89,131	79,277	68,591	-23.0

Land in Farms

- Nearly 54 percent of Ohio's 41,000 square miles of land area was reportedly farmland in 1997, down from more than 60 percent in 1978.
- Nearly 38 percent of Ohio's land in farms in 1997 existed in a metropolitan county while 62 percent was located in nonmetropolitan counties. Fringe counties of both large and small metropolitan counties contained the largest proportion of the metropolitan farmland, 67 percent of the metropolitan farmland or 26 percent of the state's total farmland (computed from Table 2.2).
- Between 1978 and 1997, the land in farms in Ohio declined 10.7 percent. The sharpest declines of land in farms occurred in large core metropolitan counties (24.3 percent decline) and large fringe metropolitan counties (15.0 percent decline).
- Nonmetropolitan Ohio has experienced a decline of land in farms of between 9 percent and 10 percent. Nonmetro counties adjacent to metropolitan areas experienced the largest net decline in land in farms, 740,353 acres. This was 43.9 percent of the total 1.6 million acre decline in Ohio from 1978 to 1997.

Table 2.2: Land in Farms, 1978 to 1997

	1978	1987	1997	1978-97
	acres			% change
Metro	6,137,648	5,789,608	5,355,854	-12.7
Large Core	547,184	497,181	414,466	-24.3
Large Fringe	2,266,280	2,103,247	1,926,816	-15.0
Small Core	1,527,963	1,457,472	1,334,715	-12.6
Small Fringe	1,796,221	1,731,708	1,679,857	-6.5
Nonmetro	9,651,185	9,207,773	8,747,231	-9.4
Adjacent to Metro	8,022,932	7,644,342	7,282,579	-9.2
Not Adj. to Metro	1,628,253	1,563,431	1,464,652	-10.0
State of Ohio	15,788,833	14,997,381	14,103,085	-10.7

Average Farm Size

- In 1997, the average farm in Ohio was nearly 206 acres⁵ (Table 2.3). The smallest average farm size exists in large, core metropolitan counties (139 acres) and the largest average farm size exists in either nonmetro adjacent to a metropolitan area (223 acres) or fringe counties of small metropolitan areas (218 acres). Data reported in Sections 3 & 4, land values and sales data, could help explain these differences.
- Table 2.3 reports the change in average farm size for the state of Ohio and by county metropolitan character. For the time period 1978 to 1997, the average farm size in Ohio increased 16.1 percent from 177 to 206 acres. Average farm size increased the most in fringe counties of smaller metropolitan areas (23.5 percent) and grew the least in core counties of the largest metropolitan regions (5.2 percent).

Table 2.3: Change in Average Farm Size, 1978 to 1997

	1978	1987	1997	1978-97
	average acres per farm			% change
Metro	161.5	170.9	186.5	15.5
Large Core	132.2	136.4	139.1	5.2
Large Fringe	167.7	173.3	186.6	11.3
Small Core	149.9	158.0	172.8	15.3
Small Fringe	176.9	195.2	218.4	23.5
Nonmetro	188.7	202.8	219.4	16.2
Adjacent to Metro	189.9	205.1	223.1	17.5
Not Adj. to Metro	183.2	192.5	202.5	10.6
State of Ohio	177.1	189.2	205.6	16.1

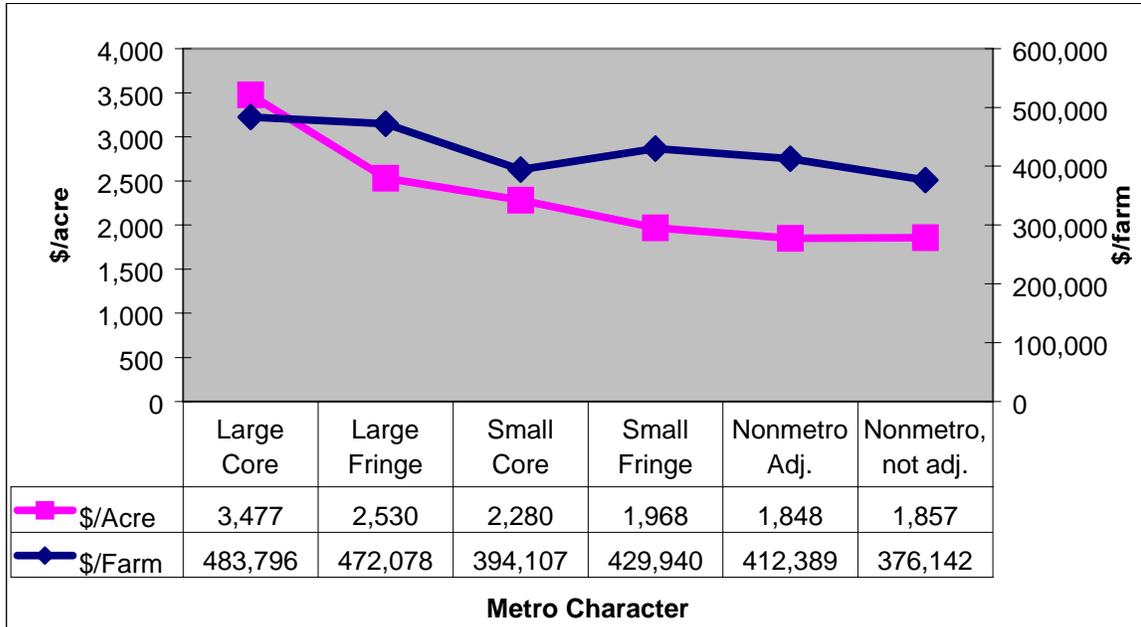
⁵ All averages and other statistics reported are computed from the aggregated county sums by metro type and are not within group, county averages. For example, average farm size for core counties of the largest metropolitan areas is the total number of acres in these counties divided by the number of farms in these counties.

Section 3: Value of Land & Buildings

Value of Land and Buildings Per Farm and Per Acre

- The value of land and buildings per acre in 1997 varied by metropolitan character (Figure 3.1). Farmers were asked to report the estimated value of their land, house, and buildings if sold in the current market. Farmland located in the largest metropolitan areas was reportedly valued at \$3,477 per acre in core counties and \$2,280 per acre in fringe counties. The value of land and buildings located in nonmetropolitan counties, adjacent and not adjacent, was reported to be around \$1,850 per acre.
- Despite smaller average farm size in the largest metropolitan areas, the higher per acre value of land and buildings in metro areas resulted in farms of the largest metropolitan areas having the highest average value of land and buildings per farm (Figure 3.1). Farms located in the core counties of the largest metropolitan areas were valued at nearly a half million dollars per farm (\$483,796) in 1997, followed closely by the value of farms in the fringe counties of the largest metropolitan areas (\$472,078). Farms in the smaller metropolitan areas and in nonmetro areas had slightly lower average farm values between \$375,000 and \$430,000 per farm.

Figure 3.1: Value of Land and Buildings Per Acre and Farm by Metro Character, 1997



Section 4: Total Agricultural Sales: Crops and Livestock

Total Agricultural Sales

- In 1997, 60.3 percent of Ohio's total agricultural sales originated in nonmetropolitan counties while 39.7 percent originated in metropolitan counties. This is a slight decline from the ratio in 1978, when 41.4 percent of agricultural sales were located in metropolitan counties and 58.6 occurred in nonmetropolitan counties.
- The total value of Ohio's agricultural sales fell by a third (33.5 percent) between 1978 and 1997 (in 1997 dollars). The total value of sales fell 36.4 percent in metropolitan areas and 31.4 percent in nonmetropolitan areas for this period (figure 4.1).
- The largest percent decline in total agricultural sales has occurred in fringe counties of large and small metropolitan areas, declining around 39 percent in these counties. The decline has been the lowest in nonmetropolitan counties not adjacent to metropolitan areas and large, core metro counties, declining 16.9 and 25 percent, respectively.

Table 4.1: Total Agricultural Sales, 1997 Dollars (000)

	1978	1987	1997	1978-97
	Sales in 97 \$ (000)			% Change
Metro	2,918,845	1,993,829	1,855,794	-36.4
Large Core	368,057	269,566	276,121	-25.0
Large Fringe	956,446	619,963	592,873	-38.0
Small Core	755,456	541,891	476,705	-36.9
Small Fringe	838,887	562,408	510,095	-39.2
Nonmetro	4,125,571	2,856,544	2,828,486	-31.4
Adjacent to Metro	3,389,729	2,294,285	2,216,755	-34.6
Not Adjacent to Metro	735,842	562,258	611,731	-16.9
State of Ohio	7,044,416	4,850,373	4,684,280	-33.5
<i>US Total</i>	<i>263,727,729</i>	<i>192,158,921</i>	<i>196,864,649</i>	<i>-25.4</i>

- A number of factors may be influencing the decline in total agricultural sales, including depressed or lower market value of commodities. Other factors may include a decline in the total number of acres in production (which declined 10.7 percent between 1978 and 1997 as shown in Table 2.2) or a shift out of value-added production (such as a decline in livestock sales, identified in Table 4.4).
- Table 4.2 shows that the decline in total sales has not been exactly mirrored by the decline in sales per farm. While total agricultural sales in Ohio declined 28.3 percent between 1978 and 1997, the average sales per farm has only declined 13.6 percent. In some types of counties, total agricultural sales per farm increased between 1978 and 1997, such as in large core metropolitan counties and nonmetropolitan counties not adjacent to a metro area (increasing 4.2 and 2.2 percent respectively).

Table 4.2: Total Ag. Sales per farm (000)

	1978	1987	1997	1978-97
	Sales in 97 \$ (000)			% Change
Metro	76,822	58,857	64,624	-15.9
Large Core	88,924	73,955	92,689	4.2
Large Fringe	70,785	51,093	57,416	-18.9
Small Core	74,130	58,729	61,733	-16.7
Small Fringe	82,625	63,406	66,332	-19.7
Nonmetro	80,678	62,918	70,936	-12.1
Adjacent to Metro	80,236	61,542	67,911	-15.4
Not Adjacent to Metro	82,781	69,235	84,587	2.2
State of Ohio	79,034	61,183	68,293	-13.6

- Explanations for the more modest declines in Table 4.2 versus 4.1 include farm operations increasing their size to increase revenue (Table 2.3) or a shifting into higher value production to generate more revenue per acre in response to declining value of commodity production.

Crop and Livestock Sales

- Tables 4.3 and 4.4 show crop and livestock sales from 1978 to 1997 (in 1997 dollars). Total sales from crops declined 28.3 percent since 1978 while sales of livestock and their products fell 40.1 percent. In both cases the level of decline is about 10 percentage points greater than the national average.
- Declines in crop sales have been lowest in the core counties of both large and small metropolitan areas, declining 14.6 and 23.7 percent respectively, while the declines in fringe counties of the largest metropolitan areas and in nonmetropolitan areas have exceeded 30 percent.

Table 4.3: Crop Sales, 1997 Dollars (000)

	1978	1987	1997	1978-97
	Sales in 97 \$ (000)			% Change
Metro	1,710,833	1,112,880	1,279,933	-25.2
Large Core	281,121	209,045	240,037	-14.6
Large Fringe	561,209	311,839	388,257	-30.8
Small Core	419,862	294,031	320,371	-23.7
Small Fringe	448,640	297,965	331,268	-26.2
Nonmetro	2,233,433	1,359,972	1,547,987	-30.7
Adjacent to Metro	1,901,547	1,146,641	1,322,551	-30.4
Not Adjacent to Metro	331,887	213,331	225,436	-32.1
State of Ohio	3,944,266	2,472,852	2,827,920	-28.3
<i>US Total</i>	<i>118,727,094</i>	<i>83,235,996</i>	<i>98,055,656</i>	<i>-17.4</i>

- Change in sales from livestock and their products vary depending on metropolitan character, with a decline of 52.3 percent in metropolitan counties and 32.3 percent in nonmetropolitan counties. Nonmetropolitan counties not adjacent to metropolitan areas have experienced only a 4.4 percent decline in total sales.

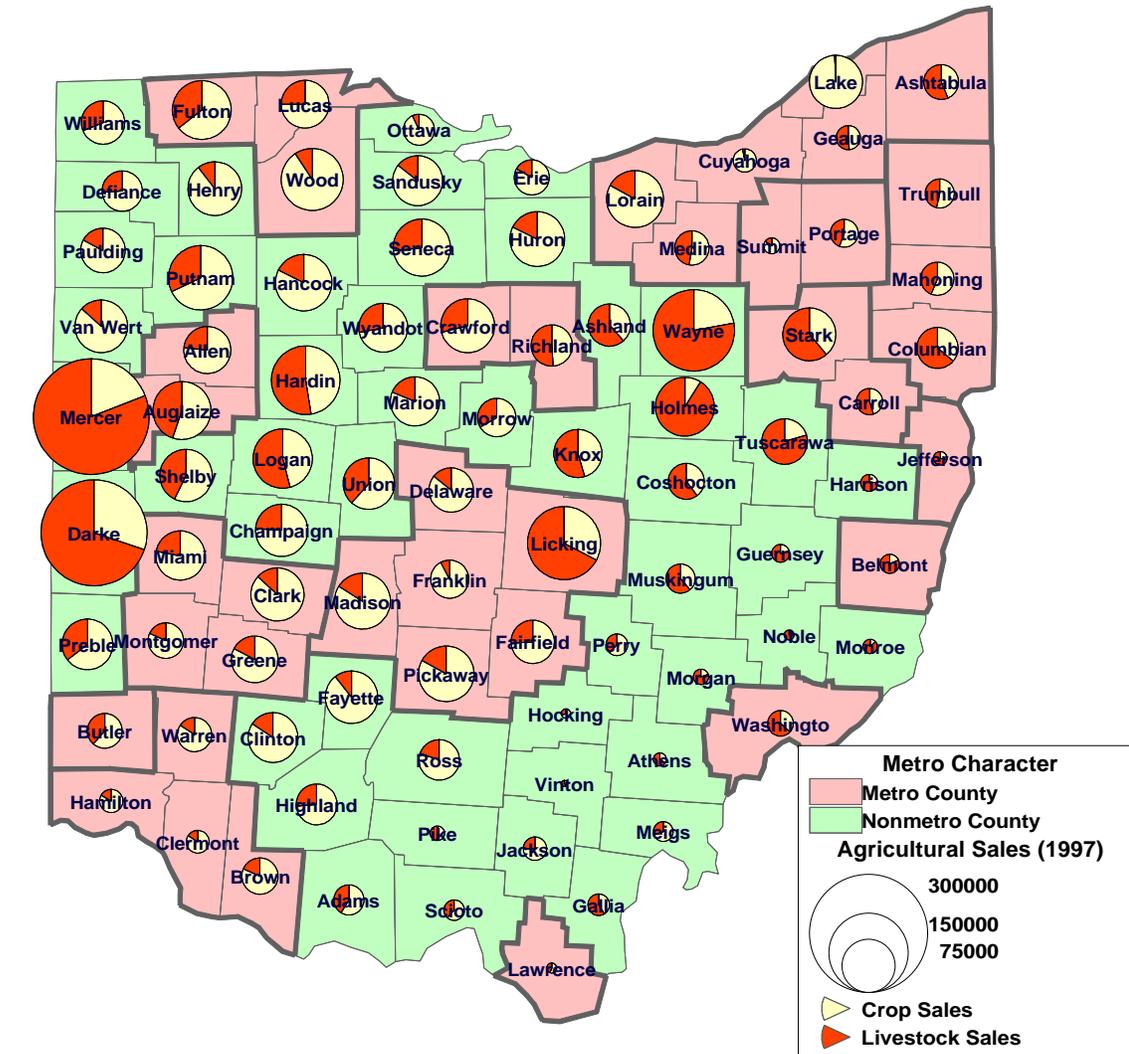
Table 4.4: Livestock Sales, 1997 Dollars (000)

	1978	1987	1997	1978-97
	<u>Sales in 97 \$ (000)</u>			<u>% Change</u>
Metro	1,208,007	880,946	575,857	-52.3
Large Core	86,938	60,520	36,083	-58.5
Large Fringe	395,232	308,124	204,613	-48.2
Small Core	335,594	247,859	156,335	-53.4
Small Fringe	390,244	264,444	178,826	-54.2
Nonmetro	1,892,143	1,496,569	1,280,493	-32.3
Adjacent to Metro	1,488,190	1,147,643	894,199	-39.9
Not Adjacent to Metro	403,953	348,927	386,294	-4.4
State of Ohio	3,100,150	2,377,516	1,856,350	-40.1
<i>US Total</i>	<i>145,000,635</i>	<i>108,922,925</i>	<i>98,808,993</i>	<i>-31.9</i>

Breakdown of Livestock and Crop Sales by County

- Map 4.1 contains a county level map showing the breakdown of total agricultural sales by crops and livestock. The four counties with the largest agricultural sales in the state all have two-thirds or more of their total sales coming from livestock and their products in 1997. These four counties are Mercer, Darke, Wayne and Licking, with Licking being the only metropolitan county of the four.
- In general, the map shows that total sales in the Appalachian region are relatively small, sales around metropolitan areas tend to be dominated by sales from crops, and livestock production is concentrated in the middle of the western third of the state and several counties located between Columbus and Cleveland.
- The map also helps illustrate another pattern, that counties with a large proportion of sales from livestock generally have larger total sales (largest circles on the map). This makes sense, since livestock production is one method for adding value to local grain production. Further, the map illustrates the generally lower level of livestock sales originating in metropolitan counties that, a trend that has existed for at least the last 20 years according to Table 4.4.

Map 4.1: Distribution of Livestock and Crop Sales by County (1997)

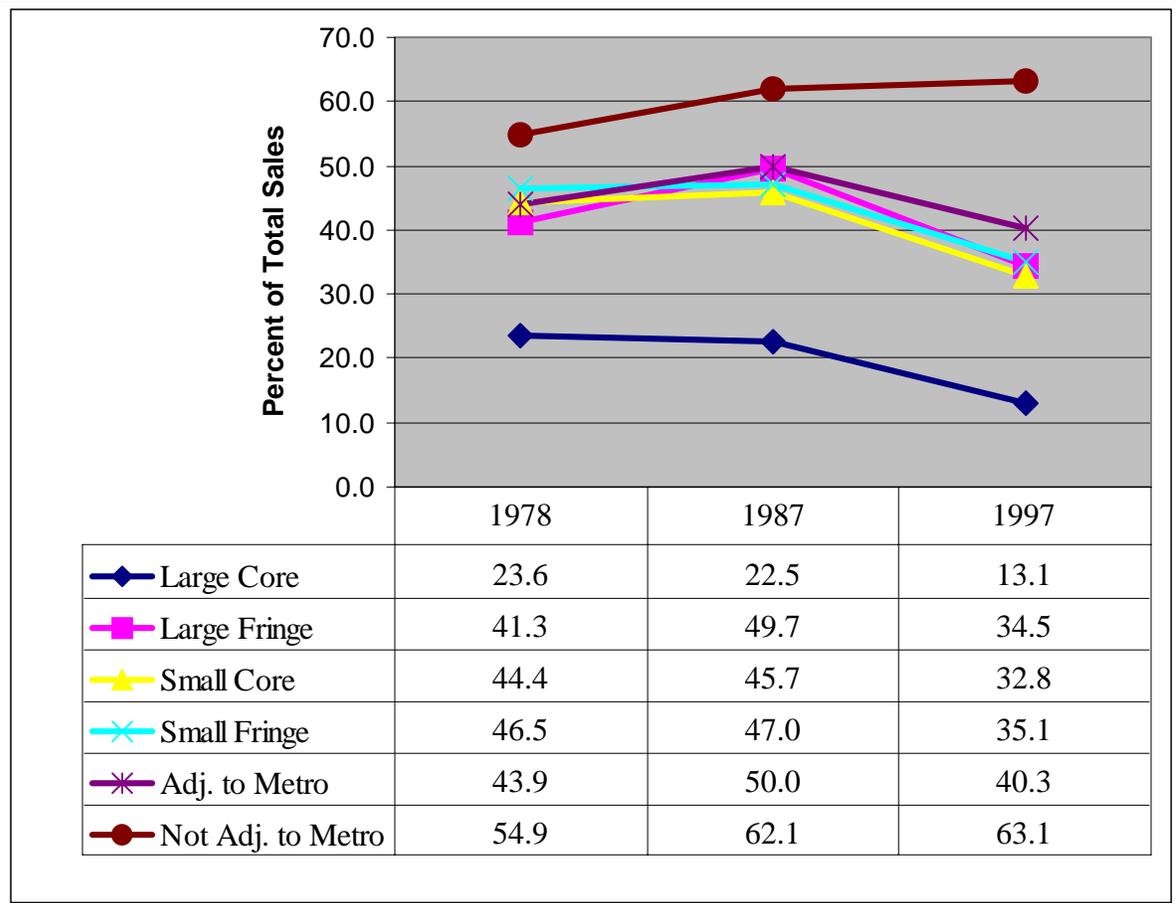


Dominance of the Livestock Sector

- Figure 4.1 provides further evidence of the declining importance of livestock sales in more urbanized counties. The trend has been for livestock sales to shift from between 40 and 50 percent of the total sales in fringe metro and nonmetro adjacent counties in 1978 to between 30 and 40 percent of the total sales in 1997.
- Since 1978, less than 25 percent of the total agricultural sales in core counties of large metropolitan areas were from livestock. In 1997, only 13.1 percent of the total sales in core, large metropolitan counties were from livestock and their products. These counties accounted for 1.3 percent of the state’s total livestock sales.

- Nonmetropolitan counties, not adjacent to metropolitan areas had the largest proportion of their agricultural sales from livestock, 63.1 percent. These nonmetropolitan counties accounted for 20 percent of the state’s total livestock sales in 1997 (computed from Table 4.3)

Figure 4.1 Livestock Sales as Percent of Total Sales (Including Table with Percents)



Section 5: Emerging Features of Urban Agriculture

Highlights:

- A majority of Ohio farmers work off farm and have primary occupations other than farming regardless of county metropolitan character. This helps explain why about half of Ohio’s farms have total sales less than \$10,000.
- The number of Ohio farms with nursery and greenhouse sales has increased 79 percent since 1978. Lake and Lorain counties ranked in the top 50 counties nationally in terms of total nursery and greenhouse sales in 1997.
- In some metropolitan areas of Ohio, particularly in the northeastern part of the state, more than 10 percent of the farms report some agricultural sales directly to consumers.

Farming Occupation and Small Farms

- Regardless of metropolitan character, only 45 percent of all farmers in Ohio reported that farming was their primary occupation in 1997 (Table 5.1).
- In 1997, 43 percent of Ohio farmers worked off farm 200+ days a year and about 60 percent of all farmers in Ohio, regardless of metropolitan character, had some kind of farm employment.

Table 5.1: Farmers by Principal Occupation and Proportion of All Farmers

	Farming is Primary Occupation		Work off farm (200+ days)		Work off farm (any days)	
	# of farmers	% of all farmers	# of farmers	% of all farmers	# of farmers	% of all farmers
Metro	12,877	44.8	12,327	42.9	16,963	59.1
Large Core	1,341	45.0	1,206	40.5	1,664	55.9
Large Fringe	4,626	44.8	4,353	42.2	6,148	59.5
Medium/Small Core	3,393	43.9	3,330	43.1	4,504	58.3
Medium/Small Fringe	3,517	45.7	3,438	44.7	4,647	60.4
Nonmetro	18,145	45.5	17,415	43.7	23,992	60.2
Adjacent to Metro	14,732	45.1	14,187	43.5	19,634	60.1
Not Adjacent to Metro	3,413	47.2	3,228	44.6	4,358	52.7
State of Ohio	31,022	45.2	29,742	43.4	40,955	59.9

Farms by Amount of Sales

- Nearly half of all Ohio farms had sales of less than \$10,000 in 1997 (Table 5.2). A higher proportion of farms located in metropolitan areas can be classified as rural residences (sales less than \$10,000) than in nonmetropolitan areas, 51 percent versus 45 percent.
- A small percentage, 15.7 percent, of Ohio farms in 1997 could be classified as large farms, with sales from \$100,000 to \$250,000, or large commercial farms, sales greater than \$250,000. A slightly higher proportion of nonmetropolitan farms fell into these two large farm categories than metropolitan farms, 16.8 percent versus 14.4 percent.

Table 5.2: Proportion of Farms by Sales Category (1997)

	RR	SF	LF	LCF
	<u>% of all farms</u>			
Metro	51.0	34.7	8.8	5.6
Large Core	54.2	31.9	7.5	6.4
Large Fringe	54.3	33.5	7.3	4.8
Medium/Small Core	51.8	34.2	8.9	5.1
Medium/Small Fringe	44.5	37.8	11.1	6.7
Nonmetro	45.3	38.1	10.4	6.2
Adjacent to Metro	45.9	37.8	10.3	5.9
Not Adjacent to Metro	42.7	39.0	10.6	7.7
State of Ohio	47.7	36.6	9.7	6.0

Rural Residence (RR)=Sales less than \$10,000

Small Farm (SF)=Sales between \$10,000 and \$99,999

Large Farm (LF)=Sales between \$100,000 and \$249,999

Large Commercial Farm (LCF)=Sales greater than \$250,000

Nursery and Greenhouse Operations

- In a previous section it was shown that livestock production is a declining proportion of agricultural sales in and around some of the largest metropolitan areas. Some sectors of agriculture, though, have grown in these areas. Nursery and greenhouse production has expanded in core counties of the largest metropolitan areas (Table 5.3). In 1978, 12 percent of all farms in the core counties of the largest metropolitan areas reported some nursery and greenhouse sales. By 1997, 17.8 percent of all farms in these areas reported some nursery and greenhouse sales.
- In fringe counties of the largest metropolitan areas and in smaller metropolitan areas there has also been a substantial increase in the number of farm operations with some sales from nurseries and greenhouses. In the fringe counties of metropolitan areas, the number of farms with nursery and greenhouse sales has grown 143 percent, to 6 percent

of all farm operations (up from only 1.9 percent in 1978). Similar type increases have occurred in the small metropolitan areas.

Table 5.3: Farms with Nursery and Greenhouse Sales

	1978	1997	1978	1997
	# of farms		% of all farms	
Metro	1,205	1,897	3.2	6.6
Large Core	496	531	12.0	17.8
Large Fringe	254	617	1.9	6.0
Medium/Small Core	330	506	3.2	6.6
Medium/Small Fringe	125	243	1.2	3.2
Nonmetro	367	915	0.7	2.3
Adjacent to Metro	322	809	0.8	2.5
Not Adjacent to Metro	45	106	0.5	1.5
State of Ohio	1,572	2,812	1.8	4.1

Farms Sales Directly to Consumers

- Another urban or consumer oriented farm enterprise is selling agricultural products directly to consumers. Nearly 9 percent of metropolitan farms reported some type of sales directly to consumers, while about 6 percent of nonmetropolitan farms reported these sales (Table 5.4). Core counties of the largest metropolitan areas had the highest proportion of farms, 11.2 percent, with some type of sales directly to consumers.

Table 5.4: Number of Farms With Direct Sales to Consumers

	1992	1997	1992	1997
	# of farms		% of all farms	
Metro	2544	2540	8.5	8.8
Large Core	374	334	11.6	11.2
Large Fringe	936	952	8.7	9.2
Medium/Small Core	753	721	9.3	9.3
Medium/Small Fringe	481	533	6.1	6.9
Nonmetro	2154	2337	5.3	5.9
Adjacent to Metro	1839	1960	5.5	6.0
Not Adjacent to Metro	315	377	4.3	5.2
State of Ohio	4698	4877	6.6	7.1

- While the number of farm operations reporting some type of sales directly to consumers grew only 3.8 percent between 1992 and 1997, total sales directly to consumers grew 14.3 percent (1997 dollars), from \$24 million to \$28 million (Table 5.5). In metropolitan Ohio, the growth was from \$14 million to \$18 million, or 22.2 percent.

- Between 1992 and 1997, the average value of sales directly to consumers per farm reporting these types of sales grew 46 percent in large core metropolitan counties, and 65 percent in fringe counties of large metropolitan areas and core counties of small metropolitan areas.

Table 5.5: Total Value of Direct Sales, 1997 dollars

	1992	1997	1992	1997	Change 92-97
	Total Sales 1997 \$ (000)		Avg \$/farm		% Change Sales per farm
Metro	14,193	18,041	4,876	7,103	45.7
Large Core	3,127	3,565	7,307	10,674	46.1
Large Fringe	4,438	6,523	4,144	6,852	65.3
Small Core	3,688	5,085	4,280	7,053	64.8
Small Fringe	2,941	2,868	5,343	5,381	0.7
Nonmetro	10,492	10,179	4,257	4,356	2.3
Adjacent to Metro	9,458	8,935	4,495	4,559	1.4
Not Adjacent to Metro	1,034	1,244	2,870	3,300	15.0
State of Ohio	24,685	28,220	4,592	5,786	26.0

County-Level Urban Oriented Agricultural Sales

- Table 5.6 identifies those counties with the largest amount of sales directly to consumers and from nursery and greenhouse sales. The table also identifies the rank of those counties that have sales levels in the top 100 nationwide.
- Licking, Mahoning, Lorain, and Portage counties all had \$1 million or more in total sales directly to consumers. Licking, with \$1.5 million in sales directly to consumers, ranked 53rd among all U.S. counties in this category of agricultural sales.

Table 5.6: Top ten counties by selected urban-oriented enterprises, 1997 (ranked by sales)

Rank	Direct Sales to Consumers		Nursery and Greenhouse	
	County	Sales (000)	County	Sales (000)
1	Licking (53)	1,519	Lake (26)	71,769
2	Mahoning (76)	1,259	Lorain (37)	49,137
3	Lorain (94)	1,064	Franklin (88)	22,520
4	Portage	1,010	Lucas (94)	21,981
5	Sandusky	895	Clark (97)	21,523
6	Columbiana	888	Cuyahoga	16,095
7	Medina	879	Delaware	13,403
8	Geauga	852	Hamilton	10,854
9	Ottawa	780	Montgomery	9,064
10	Wayne	760	Mahoning	8,748

() Number in parentheses indicates county rank in top 100 counties nationwide.

- Five Ohio counties ranked in the top 100 counties nationwide in terms of sales from nurseries and greenhouses. Lake led all Ohio counties with more than \$71 million, followed by Lorain with more than \$49 million and Franklin, Lucas and Clark Counties with around \$22 million each in nursery and greenhouse sales.
- Map 5.1 shows the distribution of farm operations reporting some agricultural sales directly to consumers. While sales directly to consumers comprise less than 1 percent of the state’s total agricultural sales, it is a popular addition to farm operations in northeastern Ohio where more than 10 percent of the farms report some sales (albeit relatively small on average) directly to consumers.
- Farm operations with some direct sales to consumers are found less frequently in northwestern Ohio and east of the Cincinnati metropolitan area.

Map 5.1: Distribution of Counties with sales directly to consumers



Conclusions

In this final section, a number of conclusions, research needs, and policy implications are identified relevant to the data and analysis reported in the previous sections.

Conclusions

- As the amount of farmland adjacent to the edge of Ohio's large and small metropolitan cities continues to increase as a result of the expanding circumference of the urban area, agriculture will likely continue to experience changes. Sales from livestock and their products may continue to decline in the fringes of the metropolitan areas if these regions continue to experience substantial growth. Up to a point, total agricultural sales may be maintained despite the loss of some on-farm diversification (livestock) and fewer acres of farmland through the addition of higher value crops to the enterprise. But farmland is finite, and conversion to higher value crops can maintain sales levels only up to a point, beyond which farmland conversion may result in a more rapid loss of agricultural sales. According to the data in Tables 2.2 and 4.1, it appears that the decline of farmland has not resulted in a proportionally higher loss of sales in Ohio's metropolitan areas. The question remains, though, whether this trend can continue into the future despite continued farmland loss.
- While loss of farmland and the declining importance of livestock sales in the most urbanized areas may be a negative consequence of a growing urban environment, farm enterprises may realize new opportunities as a result of close proximity to large population centers. It appears that a growing number of metro farmers are taking advantage of urban market opportunities to either sell high value products (such as landscaping products from nurseries) or sell products directly to consumers.

Future Research Needs

- There are a number of questions that these data are unable to address but which warrant additional consideration. One question concerns the process by which farm operators adjust to population growth and urban encroachment. For instance, how does farm operator age, the existence of heirs, off-farm employment opportunities, farm profitability, and the decline of local agricultural services influence farm enterprise decision, in conjunction with local growth and urban change? Another consideration is the effect of local planning and zoning on farm operator decisions and local patterns of agricultural production and farmland conversion.
- Another question concerns the background of the hobby and commercial farm operators in urban areas. One might consider whether the hobby and urban-oriented farmers are new entrants or existing farmers who have made adjustments. The answer to this question may provide insights into who will be farming a generation from now. If urban-oriented and hobby farmers are coming from backgrounds other than farming, it is important to develop policy educational programming consistent with this trend.

- A final research need is more focused analysis of the diversity of farm enterprises in an urban environment and the diversity of adaptive strategies. For example, livestock and traditional row crop production remain significant features of agriculture in some metropolitan counties. What are the strategies these farmers have adapted in response to proximity to urban population and what are some of the unique costs that they have integrated into their operation to remain viable and acceptable to the community?

Policy Implications

- One policy implication of this analysis concerns how well government policies and educational programming serves farm operations in more urbanized areas. While traditional livestock and cash grain production will continue to be the dominant source of sales into the foreseeable future, some counties are experiencing noticeable growth in nontraditional sectors. For example, are operators who diversify into direct sales to consumers equipped with the knowledge to fully realize the potential of this form of marketing? Further, are direct marketers and pick-your-own operations aware of the legal and regulatory issues related to their responsibilities and liabilities?
- From a community economic development standpoint, are local economies fully aware of the contribution that viable agricultural sectors (either traditional or urban-oriented) makes to the overall economic and social well-being of the community? Changes in metropolitan Ohio are definitely generating new opportunities and there may be a potential role for local governments, development organizations, and community groups to assist and enhance alternative farm ventures that bring business, people, and money into the community.
- One question often missing from discussion of farmland preservation is the issue of farmer or farm enterprise preservation. These data suggest that farms in a metropolitan region may be organized and oriented differently than farms in nonmetropolitan Ohio. Farmland preservation efforts should account for some of these differences and may want to adapt strategies that are cognizant of this fact. If the farmland preservation resources available can only preserve small land areas in the locality, it may be helpful to understand the type of farming that these smaller areas can support. Otherwise the preserved area may simply end up as open space when the farmland reverts to other land uses (such as forests) because existing farm operators find the area too small to justify farming.

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