



Case Study Report

Carroll County, Maryland

One of 15 Case Studies for the Research Project

Farm Viability in Urbanizing Areas

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Section I: Summary

Market Value of Agricultural Products and Numbers of Farms: Carroll County is traditionally a dairy and beef county, with a good deal of cash grain production as well. However, both dairy and beef have been decreasing over the last decade. Total market value for all agricultural products in the county increased 23% between the 1987 and 2002 Censuses of Agriculture; this compares to 31% for the state and 47% nationally for the same time period. The county ranks seventh in the state for value of commodities, with almost \$69 million in sales in 2002; the top four commodities were (1) milk and dairy products; (2) nursery, greenhouse, floriculture, and sod; (3) grains, oilseeds, dry beans, and dry peas; and (4) poultry products.

Although the county is very close to major urban markets, agricultural leaders interviewed for this study reported limited use of direct markets and little increase in value-added products. Based on a survey of 140 Carroll County landowners, respondents reported using wholesale markets for an average of 56% of total gross sales and direct-to-consumer markets for 28% of total gross sales.

Of the slightly more than 1,000 farms in Carroll County in 2002, the majority fell between 10–49 acres in size (40% of all farms) and 50–179 acres in size (29%) in 2002. The only notable trends in farm size since the 1987 agricultural census was completed is an increase in farms that range from 10 to 49 acres in size and a decrease in farms that range from 50 to 179 acres.

Farmer Satisfaction with Markets: Survey respondents were relatively satisfied with the accessibility (59% were very or moderately satisfied) and competitiveness (43%) of their marketing outlets. Respondents were less satisfied (27% were very or moderately satisfied) with the profitability of the markets. Exceptions were producers of hay or other forage crops, who were more likely to be satisfied with the accessibility of their markets, and producers with a higher number of separate types of both crops and animals, who were less likely to be satisfied. Respondents with some acres in vegetable production were also less likely to be satisfied with the profitability of the markets, while those who made more than 50% of total sales through direct markets were more likely to be satisfied.

Production Inputs: The same survey indicated that survey respondents seemed to have few problems with access to and availability of non-land production inputs. The most-used inputs of this type (farm chemicals and goods and services from implement dealers and seed suppliers) were available most of the time. While relatively few respondents reported using nonfamily and seasonal labor, these inputs had the lowest availability rankings from respondents. Interviews with agricultural leaders in the county generally mirrored the survey responses: most inputs were perceived as adequate, although a number of issues were raised, primarily credit problems for midsized dairy farms, consolidation of implement dealers, and the lack of new and young farmers entering or interested in entering the sector. Farm labor was also seen as a future challenge.

Land for Farming: In 2002, Carroll County had just over 147,000 acres in farmland, and about half of land was leased. The quantity of farmland in the county has decreased 12% since 1987. Survey respondents overwhelmingly felt that purchasing farmland in the county was not

affordable, with three-quarters reporting farmland as not very or not at all affordable; the respondents were more mixed on the affordability of leased land. Interviews with agricultural leaders reinforced the results of the survey, with most reporting high land costs. When questioned about the future adequacy of farmland, most thought that land would be adequate in quantity but very expensive or that it would be adequate for the types of agriculture that would be left. A number noted that the agricultural preservation and zoning programs are key to the future adequacy of farmland.

Support for Farmland Preservation: An overwhelming majority (86%) of survey respondents supported or strongly supported the purchase of development rights program in the county. Almost the same percentage (83%) felt that the agricultural tax assessment programs were at least somewhat helpful (ranging between somewhat helpful and very helpful), three-quarters (76%) felt the same about right-to-farm laws, while a little over half (54%) about zoning restrictions.

Farmers' Plans for the Future: Under half of the total surveyed owner-operators (46%) said they were planning to be farming in the county 10 years from the time of the survey (32% either were not sure or did not respond to the question). Of those under 55 years of age, 77% planned to stay. We also found that most survey respondents did not have plans for changing much about their farm operations over the next five years; the largest percentage of respondents reported a planned increase in the number of livestock and the number of separate types of livestock. Regression analysis of those planning to stay 10 years showed that (other things being equal) respondents with some owned land in the production of vegetables or with more total acres in farm production were more likely to be farming 10 years into the future. Finally, 60% of survey respondents said they had no plans to develop any of their lands, and a third reported that they expected to develop some percentage of their land (most of those owners reported expecting to develop less than 75% of their land).

Predictions of Agriculture's Viability 20 Years into the Future: The surveyed landowners tended to be pessimistic about the future of agriculture in the county. Only 8% felt that the county's agriculture had a "bright" future, while 36% felt the future of agriculture was "modest." Almost half (46%) said the future looked "dim." Regression analysis showed that, other things being equal, respondents were more likely to have a more positive outlook (defined as thinking the future would be bright or modest) if they were at least moderately satisfied with the profitability of their agricultural markets or had acres in vegetable, melon, or sweet corn.

Section II: Geographic, Historical, Agricultural, and Policy Contexts of Carroll County

Location, Size, and Urban Influence

Carroll County, 456 square miles (287,000 acres) in all, is located in the north-central piedmont area of Maryland, just south of Pennsylvania, and 10 miles northwest of Baltimore City at its closest part. The county is influenced by the entire Baltimore-Washington metro area, and Philadelphia markets only 125 miles away. In 1990, 9% of Carroll County was classified as subject to "high urban influence," 59% was subject to "medium urban influence," and 32% to

“medium-low urban influence” (Table 1). In 2003, the county was classified as being in a large metro area of 1 million or more residents.

Indicators	2006	2000	1990
Population	170,260*	150,897*	123,372*
Median household income (2006)	\$74,106**		
Median value of owner-occupied single-family home	\$363,800**		
County seat	Westminster		
Metro area	Baltimore, MD		
Extent of urban influence in county: 1990 measure	9% of the county was subject to “high urban influence”; 59% to “medium urban influence”; and 32% to “medium-low urban influence”+		
Extent of urban influence in county: 2003 measure	Large—in a metro area with at least 1 million residents or more++		

*US Census Bureau, *State and County Quick Facts*: http://factfinder.census.gov/home/saff/main.html?_lang=en

**US Census Bureau, *American FactFinder*. http://factfinder.census.gov/home/saff/main.html?_lang=en

+USDA, Economic Research Service.

++USDA Economic Research Service, *Data Sets: Urban Influence Codes*, <http://www.ers.usda.gov/Data/UrbanInfluenceCodes/>.

Rate and Location of Population Growth and Household Demographics

Carroll County has been making a transition from a rural to a suburban county for many years. The county has experienced rapid increases in population in recent years, with a 38% increase in population from 1990 (when the county had 123,372 residents) to 2006 (population of 170,260), and an increase of 13% from 2000 to 2006 (Table 1). Carroll County’s median household income in 2006 was \$74,106 and the median value of owner-occupied housing units that same year was \$363,800 (Table 1).

Much of the development in Carroll County is currently in the southeastern portion, closer to Baltimore and where a major highway intersects the county. Agricultural leaders in the county interviewed for this study reported that development of the western portion and other portions of the county is limited somewhat by the lack of a major highway system. Soil quality was also reported as limiting development in the western half of the county; this area is primarily made up of the Penn series of soils, which are unlikely to get a successful percolation tests for septic fields to allow development. While these soils are less productive agriculturally, they are farmed in the county (with lower rents than elsewhere). In addition, the area has the largest density of preserved farms.

Brief History of Carroll County

Carroll County was formed in 1836 from the western part of Baltimore County and the eastern part of Frederick County. From its founding until the late 1950s, Carroll County was a rural farming community interspersed with small towns and villages. Population growth in the county started to increase in the late 1950s.

Basic Traits of Agriculture in Carroll County

Carroll County is traditionally a dairy and beef county, with a good deal of cash grain production as well. However, both dairy and beef have been decreasing over the last decade or so.

According to 2002 agricultural census data, approximately 51% of the county's 287,000 acres in land is devoted to farm uses. In 2002, there were 1,058 farms with an average size of 139 acres. The county ranks seventh in the state for value of commodities, with almost \$69 million in sales in 2002. Carroll County was third in the state for milk production in 2002, as well as the state's leading table egg producer. The top four commodities in 2002 were (1) milk and dairy products; (2) nursery, greenhouse, floriculture, and sod; (3) grains, oilseeds, dry beans, and dry peas; and (4) poultry products.

Carroll County's agricultural markets and land use are both influenced by its proximity to the entire Baltimore–Washington, DC, area. The county is just 10 miles northwest of Baltimore City at its closest part and within a 300-mile radius are Baltimore, Philadelphia, and the Washington, DC, metro area. The surrounding counties alone include almost 3 million residents (Table 2).

County and state	Estimated 2006 population
Carroll County, MD	170,260
Montgomery County, MD	932,131
Baltimore County, MD	787,384
York County, PA	416,322
Frederick County, MD	222,938
Adams County, PA	101,105
Howard County, MD	272,452
Total of counties	2,902,592

Source: US Census Bureau, *American FactFinder*. http://factfinder.census.gov/home/saff/main.html?_lang=en

In 2002, the majority of farms in Carroll County fell between 10–49 acres in size (40% of all farms) and 50–179 acres in size (29% of all farms) (Table 3). Only 12% of farms were smaller than these ranges, and 19% of farms were larger. The only notable trends in farm size since the 1987 agricultural census was completed is the increase in farms that fell between 10–49 acres (increasing from 35% of all farms in 1987 to 40% in 2002) and the decrease of farms with acreage in the range of 50–179 (decreasing from 36% in 1987 to 29% in 2002).

Ninety percent of Carroll County's farms had gross incomes of less than \$100,000 in 2002 (Table 4). Another 5% had gross incomes of \$100,000 to \$249,999, and only 6.5% of county's farms grossed over \$250,000 in 2002. While gross farm sales have remained relatively stable in terms of percentages in each category from 1987 to 2002, there are a couple of notable changes: the significant increase of farms grossing less than \$2,500 (from 34% of farms in 1987 to 45% in 2002) and the decrease of farms with gross sales between \$2,500 and 4,999 (from 15% of farms in 1987 to 9% in 2002).

Table 3: Carroll County—Agricultural Land-Use Traits				
Traits	2002	1997	1992	1987
Acres in farms	147,252	167,871	157,505	166,745
County's approximate total land area (in acres)	287,440	287,458	287,458	287,458
Percentage of total county's land in farms	51	58	55	58
Number of farms	1,058	1,159	1,080	1,238
Average size of farms (acres)	139	145	146	135
Number of farms 1–9 acres (% of total farms)	129 (12%)	127 (11%)	92 (9%)	115 (9%)
Number of farms 10–49 acres (%)	427 (40%)	480 (41%)	405 (38%)	436 (35%)
Number of farms 50–179 acres (%)	302 (29%)	342 (30%)	371 (34%)	448 (36%)
Number of farms 180–499 acres (%)	147 (14%)	149 (13%)	158 (15%)	182 (15%)
Number of farms 500–999 acres (%)	36 (3%)	40 (4%)	38 (4%)	42 (3%)
Number of farms 1,000+ acres (%)	17 (2%)	21 (2%)	16 (2%)	15 (1%)
Harvested cropland in acres	99,790	104,516	104,959	103,965
Acres in pasture or grazing	10,591	15,415	18,027	16,148
Percentage total land in farms that was leased into farm operations	46	48	51	46
Per acre average market value of land and buildings	5,629	3,894	3,480	2,449
Per farm average market value of all machinery and equipment	67,770	54,381	51,108	43,911

Total market value for all agricultural products in Carroll County increased 23% from the 1987 Census of Agriculture to that of 2002; this compares to 31% for the state and 47% nationally for the same time period. In terms of the market value for crops and livestock in the county, overall sales of crops has increased since 1987, while livestock sales have remained stable or decreased in real terms (Table 4). Although dairy remains the top agricultural commodity in the county, sales have only remained stable since 1987 (thus decreasing in real terms), and sales of other livestock commodities have decreased since 1987. There has been a marked increase, however, in sales of nursery, greenhouse, floriculture, and sod, and smaller increases in sales of hay, silage, and field seeds, as well as vegetables and melons. Sales of grains, one of the county's traditional commodities covering many acres, also decreased (slowly) since the 1992 agricultural census

Interviews with agricultural leaders in the county support most of the agricultural census data; Carroll County was traditionally a dairy and beef cow county with a good deal of cash grain production. These traditional commodities are still strong but in decline. There has been an increase in produce acreage, but most of it has been on contract for vegetable processing (peas, snap peas, sweet corn). Although nursery and greenhouse sales are increasing, interviewees reported that most of the sales were coming from one large greenhouse in the county.

Measures of sales	2002*	1997*	1992*	1987*
Total market value of products (in thousands)	68,956	71,238	66,966	55,899
Average market value per farm	65,175	61,465	62,005	45,153
Total number of farms	1,058	1,159	1,080	1,238
Number of farms grossing:				
<\$2,500	471 (45%)	410 (35%)	343 (32%)	421 (34%)
\$2,500–4,999	93 (9%)	162 (14%)	146 (14%)	191 (15%)
\$5,000–9,999	101 (10%)	151 (13%)	160 (15%)	161 (13%)
\$10,000–24,999	126 (12%)	158 (14%)	142 (13%)	152 (12%)
\$25,000–49,999	66 (6%)	65 (6%)	77 (7%)	73 (6%)
\$50,000–99,999	84 (8%)	65 (6%)	61 (6%)	93 (8%)
\$100,000–249,999	50 (5%)	87 (8%)	92 (9%)	103 (8%)
\$250,000–\$499,999	41 (4%)	38 (3%)	35 (3%)	29 (2%)
\$500,000 or more	26 (3%)	23 (2%)	24 (2%)	15 (1%)
Market value of total crops including nursery and greenhouse	31,142	25,740	21,737	16,138
Grains	10,688	11,319	12,460	8,628
Vegetables, melons, potatoes, and sweet potatoes	3,869	3,109	2,519	1,282
Fruits, tree nuts, and berries	1,280	1,971	1,338	837
Nursery, greenhouse, floriculture, and sod	12,447	6,813	3,754	3,951
Hay, silage, and field seeds	2,473	2,514	1,655	1,392
Market value of total livestock, poultry and their products	37,813	45,499	45,229	39,761
Poultry and eggs	7,902	12,261	14,539	7,492
Cattle and calves	5,310	8,175	7,278	7,452
Milk and other dairy products from cows	21,631	21,517	21,269	20,663
Hogs and pigs	1,483	2,026	1,285	1,889
Sheep, goats, and their products	138	124	95	219
Horses, ponies, mules, burros, and donkeys	1,273	NA	NA	NA
Total value of agricultural products sold directly to individuals for human consumption	679	1,243	NA	NA
Market value of recreational services	22	NA	NA	NA

*Number in parentheses is percentage of farms.
NA = Not available for publication in the *Census*.

Most agricultural leaders reported no new agricultural products (new to the county) being raised in substantial quantities. Interviewees reported limited use of direct markets by farmers in the county; those that exist include use of farmers’ markets in the county,¹ Washington, DC, and Baltimore, as well as direct marketing of goat, lamb, hogs, and beef (the county has four USDA-inspected custom processing facilities). Interviewees reported very little increase in value-added products, however. The increasing suburbanization of the county also resulted in an increase in selling hay to horse farms, the general public, and landscapers.

¹ In addition, most interviewees reported limited success for the county’s own farmers’ markets.

Public Policy Context

Carroll County is governed by three county commissioners (to be increased to five in 2010). A seven-member Carroll County Planning and Zoning Commission is responsible for comprehensive plans, zoning ordinances, subdivision regulations, and development guidance.² Carroll County has eight municipalities (Hampstead, Manchester, Mount Airy, New Windsor, Sykesville, Taneytown, Union Bridge, and Westminster), and each town and its surrounding growth area is considered to be a Community Planning Area (CPA) (or a planned service area for water and sewer). There is one unincorporated town (Finksburg), also considered to be a ninth CPA. The county government exercises land-use powers in unincorporated parts of the county.

During the 2006 legislative session, House Bill 1141 added two required planning elements that local governments must include in their comprehensive plans by October 1, 2009. These are the “municipal growth element” and the “water resources element.” A municipal growth element, required for municipalities, examines past growth trends and patterns and projects future growth in population and resulting land needs as a basis for planning future municipal annexation. A water resources element, required of counties and municipalities, examines available water resources in relation to growth and projects whether there is adequate water supply and wastewater capacity (in septic and wastewater treatment plants) to meet current and future needs, as well as addressing their potential impacts.

Section III: Viability of Carroll County’s Agricultural Sector at the Time of the Case Study (2005–2007): Results of the Survey with Landowners and Interviews with Agricultural Leaders

This section focuses on information obtained from interviews with agricultural leaders and a survey of landowners in Carroll County, as well as ancillary information. Since the survey was completed in the winter of 2006 and most of the interviews were conducted before the end of that year, we are reporting perceptions and attitudes that were expressed largely before the significant increases in the market prices of major agricultural commodities that began in 2007.

Interviews with Experts

Interviews with 20 agricultural leaders were completed from March 2005 to November 2007. The interviewees included personnel from all the major USDA offices in the county (Extension Services, FSA, NRCS); the county’s Department of Economic Development and Department of Planning; representatives from the Agricultural Commission; the county’s Land Trust; Carroll County College; and private-sector input and marketing services, including livestock, machinery and equipment dealers, and agricultural credit.

Survey Respondents

In the survey of farmland owners, 140 people responded that they owned land that was farmed in Carroll County during 2005. The mean number of acres owned by the respondents was 103 acres, with a median of 62 (the minimum was 15 acres, with a maximum of 750 acres). In

² Article 66B (entitled “Zoning and Planning”) in the Maryland Code delegates basic planning and land-use regulatory powers to the state’s municipalities, Baltimore, and noncharter counties.

addition, three-quarters of those responding to farm sales questions reported under \$49,999 in gross sales during 2005 (see Appendix A).

Of the total 140 landowners, 71 (or 51%) were operators of at least some of the owned farmland and another 16 (11%) were not operators but had detailed information about how the farmland is operated. Most of the information provided within this case study is based on the responses of these 87 respondents. The other 46 respondents said that they were not operators of the land nor did they have detailed knowledge about how the farmland is operated; their answers are reported for the purpose of representing demographic characteristics and opinions about policy tools that affect agriculture and farmland, and about the future of agriculture in the county.

Demographics of Survey Respondents: Almost 70% of survey respondents were 55 years or older (higher than the 2002 agricultural census of 50% for the county), 72% were male, 31% had completed high school, while another 60% had at least some college experience. Of those responding to the question, 25% indicated that farming was their principal occupation (much below the 2002 agricultural census of 56% for the county), 43% reported farming full-time, while 57% reported farming part-time. Only 6% reported that they received 100% of their household income from farm operations, while the majority (41%) reported between 1% and 24% of household income from farm operations. Nineteen percent reported no household income from farming operations.

Section IIIA: Marketing Outlets for Carroll County Agricultural Products

The 60 respondents who reported on their marketing outlets used wholesale markets for an average of 55% of their total sales (Table 5). The most important of these outlets are private grain elevators (averaging 24%) and other wholesale markets (17%). They also used direct-to-consumer markets for an average of 29% of total gross sales, with a focus on direct on-farm,

Type of market (n = 60 respondents reported on marketing outlets)	Average percentage of farms' total gross sales
<i>Wholesale markets (total)</i>	55
Private grain elevator	24
Processor (including milk)	9
Livestock feed company	3
Other wholesale markets	17
<i>Consumer-direct (total)</i>	29
Direct on-farm, farm stand, u-pick	15
Farmers market	7
Other consumer direct	8
<i>Direct-to-retail (total)</i>	3
Restaurants or food caterers	2
Other	1

Note: Total does not equal 100% because not all respondents totaled answers to 100%.

farm stand, or “u-pick” (15%) sales. These numbers to some extent represent the nature of the county’s agriculture, although direct marketing may be overrepresented based on conversations with agricultural leaders who reported limited direct marketing on the part of the county’s farmers. In addition, on average these respondents sold 61% of their total gross sales within a one-hour trip from the farm and 9%, more than one hour away.

Satisfaction with Carroll County’s Marketing Outlets

When asked about their satisfaction with marketing outlets (Table 6), survey respondents overall were more satisfied with the accessibility of marketing outlets (59% were very or moderately satisfied), than either the competitiveness (43% very or moderately satisfied) or profitability (27% very or moderately satisfied).

Table 6: Carroll County—Respondents’ Satisfaction with Accessibility, Competitiveness, and Profitability of Marketing Outlets			
Response option	Accessibility (N = 71)	Competitiveness (N = 70)	Profitability (N = 72)
	<i>Percentage</i>		
Very satisfied	27	7	3
Moderately satisfied	32	36	24
Somewhat satisfied	22	27	39
Not at all satisfied	4	11	17
Not sure	14	19	18

Analysis of Survey Results—Accessibility: We used logistic regression analysis to look for determinants of these measures of satisfaction with marketing outlets.³ Our hypotheses included that respondents’ evaluations of their markets’ *accessibility* varied with the percentage of their total 2005 sales achieved through direct marketing, with the percentage of total sales transported to points of sale “within a one-hour trip from your farm,” and with the respondents’ ages. We also used total acres being farmed, overall gross farm sales, the types of marketing outlets used in 2005, and the types of farm products raised on owned land that year. The statistically significant regression findings⁴ were that, other things being equal:

- Respondents with at least some owned land in production of hay or other forage crops were more likely to be “very satisfied” or at least “moderately satisfied” with the accessibility to markets, while those with a higher number of separate types of products (i.e., number of different kinds of crops and animals raised)⁵ were less likely to be satisfied with the accessibility to markets.
- Those who used family labor were more likely to be satisfied with the accessibility to markets, while those who used year-round labor were less likely to be satisfied.
- Those who found leased land “very affordable” or “affordable” were more likely to be satisfied with the accessibility of markets, as well as those who supported or strongly supported the purchase of development rights program in the county.

³ Logistic regression—see Scott Menard, 2002, *Applied Logistic Regression Analysis*, 2nd ed. (International Oaks, CA: Sage Publications), 111 pp.

⁴ To qualify as a significant determinant of the likelihood of the respondent being at least “moderately satisfied,” an independent variable had to be statistically significant in a Wald test at the 0.1 level or better.

⁵ For our categories of different types, we adapted groupings found in the 2002 Census of Agriculture’s Table 2.

Analysis of Survey Results—Competitiveness: In our analysis of the likelihood of being at least “moderately satisfied” with the markets’ *competitiveness*, we again found no variables related to marketing outlets or distance. Other things being equal:

- Those respondents who used seasonal labor or were relatively more educated were *less* likely to be satisfied with the competitiveness of markets.
- More likely to be satisfied with market competitiveness were owners who felt that the property-tax assessment programs that value agricultural land for its farm value rather than prevailing real estate values were very or moderately helpful in keeping property taxes at acceptable levels, respondents who had similarly positive opinions about the effectiveness of local zoning policies in maintaining an adequate supply of farmland, and respondents who reported relatively many dairy cattle and calves on their owned land.

Analysis of Survey Results—Profitability: For explaining the likelihood of being “very satisfied” or “moderately satisfied” with the *profitability* of market outlets, we tested for the effects of many of the same hypothesized causal variables. In this round of regression analysis, we found these statistically significant relationships:

- Those respondents who had at least some acres in vegetable production were less likely to be at least moderately satisfied with the profitability of the markets, while those who made more than 50% of total sales through direct markets were more likely to be satisfied.
- Those that found leased land “very affordable” or “affordable” were more likely to be satisfied with the competitiveness of markets.
- Finally, respondents who found the use of large-animal veterinarians available at least most of the time were more likely to be satisfied with the profitability of markets.

Table 7 provides a contingency table for the satisfaction levels of the groups of respondents who were indicated by the above analysis to be more satisfied.

Table 7: Satisfaction with the Accessibility, Competitiveness, and Profitability of Marketing Outlets for Surveyed Owners' Farm Goods			
Dimensions evaluated and groups of respondents	Very satisfied	Moderately satisfied	Either very or moderately satisfied
	<i>Percentage</i>		
Accessibility of markets			
All respondents (<i>n</i> = 71)	27	32	59
Those with some owned land in production of hay or other forage crops (<i>n</i> = 52)	25	42	67
Believes leased land is either "very affordable" or "affordable" (<i>n</i> = 16)	31	50	81
Supports or strongly supports the purchase of development rights in the county (<i>n</i> = 64)	28	36	64
Used family labor in 2005 (<i>n</i> = 59)	32	36	68
Used year-round labor in 2005 (<i>n</i> = 18)	17	22	39
Competitiveness of markets			
All respondents (<i>n</i> = 70)	7	36	43
Believes zoning policies are "very helpful" or "moderately helpful" in maintaining an adequate supply of farmland (<i>n</i> = 15)	—	73	73
Believes use value assessment policies are "very helpful" or "moderately helpful" in maintaining an adequate supply of farmland (<i>n</i> = 44)	7	52	59
Whether or not had at least the median number of dairy cows and calves (<i>n</i> =67)	0	80	80
Profitability of markets			
All respondents (<i>n</i> = 72)	3	24	27
At least 10 acres in vegetables and melon production (<i>n</i> = 17)	—	12	12
Marketed more than 50% of products to direct marketing outlets (<i>n</i> = 19)	—	59	59
Believes leased land is either "very affordable" or "affordable" (<i>n</i> = 16)	6	44	50
Found large animal veterinary services are available "always" or "most of the time" (<i>n</i> = 43)	5	35	40

In terms of wholesale marketing outlets, interviewees generally mirrored the survey results. They reported that the grain market has become very concentrated in buyers, with all of it going to Purdue, which built a soybean facility in the county a few years ago. In the past, grain operators shipped their grains to Baltimore where Cargill had a harbor facility; however, the pier collapsed and they did not rebuild the facility. Dairy got mixed reviews in terms of adequacy of markets; however, all the agricultural leaders who discussed dairy farmers saw substantial decline in that area. In addition, changes in beef operations were noted.

In terms of marketing outlets for farmers, I would say that they do not have adequate marketing outlets from listening to farmers. We lost a grain drop-off point south of Baltimore, and now they have to truck their stuff a long way. The cash grain marketing outlets are hurting. Dairies are doing okay because they have their outlets.

Grains are limited because of the concentrated markets. Dairy is very tricky because there are only a few outlets. Fruits and vegetables couldn't ask for a better market. Washington, DC, and Baltimore are within an hour's drive. If you are organic or unique, that is great. You can do direct marketing or market with other folks cooperatively.

Dairy income is down and a lot of people are getting older and no one in the family wants to take it over. The older folks are selling out and the land is going into grain. The larger beef farms have decreased, although some beef cows are now in small herds and they are marketing pure breeds and direct marketing.

Development in the county is also to some extent driving changes in marketing; for instance, hay markets have seen growth due to a strong forage demand for the increasing number of horse operations that are on small-acreage lots. As noted in an earlier section, interviewees reported that few of the county's farmers are successfully using the region's direct markets. However, they also indicated that there were many opportunities in this area and that farmers seemed to be increasingly interested in utilizing these markets. Smaller farmers and farmers of unique products were generally seen as having good access to markets. Limitations for direct marketing were also raised.

They have lots of opportunities, but they haven't made the connection yet. But as [the Maryland Department of Economic Development] continues to help them, it should get better.

Fruit and vegetables for farmers' markets are growing somewhat.

Smaller farmers and newer farmers come into the market having an idea of where they can market, whether it is [marketing to] farmers' markets or restaurants, for example. They are okay. It is the larger farmers that have more problems. There are no processing plants for corn here, and Purdue will probably move their grain transport area sometime.

In this region, small farmers have a satisfactory choice of markets. They are doing more direct retail, and they have a number of custom slaughtering facilities. We are well suited to market products. We are always looking for an opportunity. We are better off than farmers in southern Maryland who do not have the slaughtering facilities or access to markets.

There are still a lot of dairies around but the profits are not good. They are coming to alternative marketing meetings, though. The largest vegetable growers are moving on to other things, too. For instance, one grower has moved some into trees, bushes, and landscaping materials.

There are four farmers' markets in Carroll County, but they are not doing very well. People in this county expect things like big beets for cheap prices. Not like in [neighboring] Howard County where you can get "baby beets" at four times the price. So, the concept of the new customer has not arrived yet. The county is still focused on traditional agriculture and "marketing for reasonable prices."

Marketing Programs Operating in Carroll County

Interviews with county agricultural leaders provided some information about currently operating programs in the county that promote or assist with marketing.⁶ The main venues for providing marketing assistance include (1) the Department of Economic Development, which has a marketing specialist to assist the county's farms with marketing and diversification (see <http://www.carrollag.org/>) and (2) University of Maryland's Cooperative Extension Service's county office, which assists farmers with business management and marketing. Agricultural leaders in general were positive about the programs available to the county's farmers, and both programs seem well supported by the county. However, most thought that these programs were limited in their ability to help farmers. For instance, while the programs provide technical assistance, the fact that they do not offer financial assistance to support marketing development was viewed as a limiting factor.

As of the 2006 growing season, the county had three or four farmers' markets operating, but as noted previously, most agricultural leaders interviewed about the markets felt they were generally unsuccessful in providing an alternative avenue for the county's products. Interviewees listed other groups active in assisting the farmers in the county, although none was given the prominence of the others listed above. These include the Small Business Administration (SBA) (which helps with marketing and business planning), NRCS, Future Harvest/CASA (nonprofit sustainable agriculture group), Maryland Cattleman's Association, Maryland Grain Producers, and other commodity groups. Few state or other outside resources for marketing assistance were described by interviewees. Most recently (2007), statewide, the University of Maryland Cooperative Extension has also started developing the Maryland Rural Enterprise Development Center to help support and develop agricultural entrepreneurship and business development in Maryland, and has hired a Marketing Specialist through the College of Agriculture and Natural Resources Marketing Program.

Finally, one resource seen as important was agricultural market development provided by Carroll County College (through the Advanced Technology Center). The Center had a grant from the state that provided funding for marketing development from 1998 to 2001; this translated into a number of learning opportunities for farmers during this period, including, for instance, courses on exporting and business development, and training on alternative agriculture and value-added products. Further funding, however, was not provided; and they no longer have an agricultural expert on staff at the Center.

Another indication of the availability and use of marketing programs in the county is revealed in the survey of landowners. Few survey respondents seem to be using, or had opinions about, programs that would assist with marketing agricultural products (Table 8). Of the marketing programs that are operating in the county, survey respondents found programs focused on marketing directly to consumers the most useful (25% said they were either very or moderately useful), with programs that help in developing other agricultural enterprises (20%) and processing crop or livestock products from the farm (19%) not far behind. In addition, the large percentage of respondents who are "not sure" or not responding to the question suggests that these programs are not broadly provided to county farmers.

⁶ Note that this is not an exhaustive list since it was developed from the interviews only.

When asked whether these same marketing programs should be provided to assist farmers, whether or not they are already available (Table 9), over half of survey respondents supported programs on marketing directly to consumers (57%); others with high respondent interest included marketing directly to retail markets, processing crop or livestock products that the farm raises (46% each), marketing to wholesale markets, and diversifying or adding new products (45% each).

Table 8: Carroll County—Agricultural Landowners’ Perceptions of Assistance Programs						
Possible assistance program	Not operating in county	Very useful	Moderately useful	Somewhat useful	Not at all useful	Not sure or did not answer
<i>N = 87</i>	<i>Percentage</i>					
Marketing directly to consumers	5	14	11	11	5	54
Marketing directly to retail markets (stores, restaurants)	6	2	10	8	8	67
Marketing to wholesale markets	3	10	5	9	2	70
Developing other ag enterprises (e.g., ag tourism)	5	7	13	6	6	65
Diversifying or adding new products	2	2	8	10	5	73
Developing value-added products (bagging, packaging, bundling, precutting, etc.)	3	1	2	8	7	79
Processing crop or livestock products the farmer raises	5	9	10	13	2	61

Table 9: Carroll County—Agricultural Landowners’ Preferences for Whether Assistance Programs Should Be Operating in Carroll County*				
Marketing assistance programs	Yes	Maybe	No	Not sure or no response
<i>N = 87</i>	<i>Percentage</i>			
Marketing directly to consumers	57	11	1	30
Marketing directly to retail markets (stores, restaurants)	46	13	2	39
Marketing to wholesale markets	45	13	5	38
Developing other ag enterprises (e.g., ag tourism)	36	23	8	33
Diversifying or adding new products	45	21	1	33
Developing value-added products (bagging, packaging, bundling, pre-cutting, etc.)	24	25	5	46
Processing crop or livestock products the farmer raises	46	15	5	34

*Text of question: “Whether or not these programs are operating in the county or functioning effectively, do you believe that in Carroll County there *should* be programs to assist farmers with [type of assistance program]?”

Opinions about the Future Adequacy of Market Outlets in Carroll County

Finally, we asked agricultural leaders their opinion about what the adequacy of marketing outlets would be in 2015. Although there were some challenges seen in the more traditional products

(especially livestock), most interviewees felt that marketing outlets would remain stable. Many also saw opportunities for small and direct-marketing farmers.

We won't have a problem with dairies and their milk, and probably not for cash grains.

[Marketing outlets] will be fewer and farther between. I wonder if the county livestock sale can survive. If not, our farmers will have to sell in Pennsylvania.

We will maintain [marketing outlets] and stay stable. Maybe increase a bit when farmers see the new opportunities, as demand increases and as the knowledge base of farmers increases.

[We will have] some challenges in the cattle industry. We have a livestock-marketing outlet in the center of the county that is in jeopardy. If that goes, the next closest market is in Lancaster, about 65 miles away. The market for vegetable crops/greenhouses is done on the farm or in local markets and is not a problem. We have grain terminals and brokers in the country and I don't see a problem. We have made changes in the way grain is marketed in the county. A new terminal was put in the county in the last three years. I feel good about this. We have a high basis for grain crops here, unlike in the Midwest. We are in a good area for marketing. It really is not a concern except for livestock.

[Marketing outlets] will take some work to be adequate. Small operators have an advantage because they set their terms and develop their own clientele. But, for example, we sell to a local butcher shop, but how long will that stay around? I think marketing will be one of the bigger problems we face.

There will be a dichotomy: large-land commodity production and small-land direct marketing. I think the small farmer will be more likely to be making the money, not the large farmer.

[Marketing outlets] will change. There will be fewer markets in a general sense. For example, the niche and ethnic markets will become more standard and will be more controlled than they are now. The opportunities will be less, rather than more.

Section IIIB: Inputs of Agricultural Production in Carroll County

Adequacy of Inputs for Agricultural Production in Carroll County

Inputs for agricultural production are an important component in the issue of farm viability. Few landowners in the survey seemed to have problems with the availability of production inputs in general (other than land) (Table 10). The most-used inputs were farm chemicals and goods and services from implement dealers or seed suppliers, and most respondents reported availability of these at least most of the time (79%, 88%, and 81%, respectively).

While fewer respondents use nonfamily and seasonal labor, these also had the lowest percentages of respondents reporting availability at least most of the time (41% and 23%, respectively). Agricultural census data from 2002 show that approximately 23% of farms in the county hired at least one worker. However, few farms had many hired workers; 8% had at least three hired workers, and only 1% had at least 10 workers.

Table 10: Carroll County—Availability and Use of Agricultural Production Inputs					
Type of input	Percentage of respondents (N = 140) using input in 2005	Availability			
		Always	Most of the time	Some of the time	Rarely or never
		—Percentage among users—			
Bank or other credit	24	48	18	21	12
Family labor	52	45	26	23	5
Nonfamily labor	31	16	25	32	27
Seasonal labor	19	8	15	35	42
Year-round labor	14	30	25	20	25
Farm chemicals	57	61	18	16	5
Veterinarian services	45	67	16	13	3
Goods and services from seed supplies	56	65	23	9	3
Goods and services from implement dealers	56	54	27	16	4
Water for crops or crop irrigation	45	86	11	3	0

Interviews with agricultural leaders supported the results for agricultural production inputs. Credit and the choice of credit sources (even with consolidation in the sector) were generally viewed as adequate with most credit coming from local lenders, although with qualifiers. Both small and large operations were viewed as tending to have adequate credit availability. In fact, smaller operations were viewed as far better off than most. Midsized dairy operations were reported as having the most difficulty. It was also noted that equine operations have become a much larger portfolio of credit lenders in Carroll County.⁷

Equipment dealers, chemical dealers, and other services (such as large-animal veterinarians and other services specifically for livestock operations) were also reported as adequate by agricultural leaders. Chemical and equipment dealers and services have consolidated over the last 10–20 years, but their services were still viewed as adequate. In addition, these input services are trying to make changes to their businesses to take advantage of the development in the county.

For now, we are in good shape. Farmers may have to travel a bit, but within a decent distance.

Our biggest crop is people. We have had to transition from agriculture to the consumer and commercial equipment business. There are not as many farmers. Equipment dealers are either getting bigger or getting out.

The horse industry is serviced by many of the same service people.

It isn't like all the vets and dealers are moving from dairy to horses, though. All the input services are staying with dairy.

On the issue of labor for farming, most of those interviewed saw it as a challenge but also noted that it depended on the type of farm:

⁷ For instance, one lender reported that horse operations now make up 20% of his portfolio, whereas once dairy made up 35% of the portfolio but has now decreased to 20%.

This is becoming harder and harder. The bulk of farmers are one-man, one-family operations.

Labor is very difficult and it is impacting the fruit and vegetable folks. They do have migrant labor, but lately this labor pool finds they can do better on construction crews.

Survey respondents were not asked about the adequacy of new or young farmers entering the sector. However, agricultural leaders raised it in interviews as a very important input to the sector. Few new or younger farmers seem to be entering farming in Carroll County. Those that do are usually the next-generation farmer, able to inherit farmland from the parents.

Very few younger farmers are entering, and it is a problem. And those entering have a distorted view of how much time it takes to farm. Very few want to direct market produce or graze animals because it takes too much time.

No new farmers are coming in. It is hard for the kids to take over—they cannot buy out the farm because of the land values. Where easements have been sold, it is somewhat more attractive for younger farmers. But wealthy people are buying out that land for horses. The only way for new farmers to come in is for the farm kids to sell the easements and use the money to pay Mom and Dad for the farm.

If there are younger farmers, they are assuming the farm from their parents. No “new couple” types are coming in. The factor there is the availability and price of the land.

Compared to 5–10 years ago, the greatest factor is land value, which has grown exponentially. The main impact there is that not many farmers are turning their farms over to their children.

Opinions about the Future Adequacy of Inputs for Agricultural Production in Carroll County

Although we did not ask survey respondents about their opinion of the future adequacy of the inputs discussed above, we did ask agricultural leaders for their opinion of the adequacy of these inputs in 2015 (or 10 years into the future). Below is a synopsis of their opinions:

In general, equipment, chemical and other dealers providing inputs and services to the county’s farmers were seen as being adequate in 10 years, although with some qualifiers. Some noted that they would be adequate for the farming that was left in the county. Others noted that the industries will experience changes in the future, likely seeing further consolidation, but that inputs would still remain adequate. Some interesting comments made by interviewees include:

The ones we have here are strong. We have feed mills and a big John Deere dealer. There are some challenges, but overall we are in good shape. All are transitioning to serving “Harry Homeowner”—for example, selling tractors to homeowners mowing a few acres. The feed people are adapting to the horse industry. The seed and corn input sectors may have problems if they cannot adapt.

They will probably be adequate, but it will be different. Consolidation is happening already. The main thing that has kept them okay here has been urban development. The

machinery dealers sell lawn and garden stuff. Probably the chemical and fertilizer dealers will be harder pressed.

The dealers will be available but [farmers] may have to go farther. You can now go on the Internet and get UPS to deliver anything. John Deere and a few other dealers have consolidated here. We don't have three or four dealers in the county anymore. They have moved farther away but they have developed catalog, Internet, and service information. They have service vans that come out and service us at the farm. More service work is done at the farmer's shop. You can also do some service over the phone. They are adapting to this. Through the Internet and service programs, you can get and will get the parts and service you need. It can be awkward at times, but it works.

Labor was seen as either continuing to be challenging (as it currently is) or worsening:

[Labor] is probably more important than credit. I work with more and more farms that struggle with this. It is one area that is hurting, especially getting immigrants into the country. We need a program that is there to assist the immigrants.

It will be a problem, but it depends. It was a problem for me when I was farming. The quantity of labor is all but dried up. My next move was to get foreign labor. The availability of that is good. The local labor situation is not good, but foreign labor is available.

I am thinking about the transitions going on now. I know that some large dairies are moving into getting labor from south of the border and that has been okay. Most things work out. People are not hunting for agricultural jobs per se, but it will work out, I believe.

This is not going to get any better, and it is hard now.

Credit was generally seen as being adequate into the future, although with qualifiers as to the operation.

[Credit] will still be there. As long as land values and income stay in line, folks will be able to get credit. The number of lenders may get a little tighter; we've seen that already with the lenders moving away from understanding farming. But it will still be there.

I don't see much change [with credit]. We have strong credit in the county. Mid-Atlantic is doing a good job. Some banks don't understand farming, but Mid-Atlantic does. However, I should say that if they left, we'd be in a bad trouble.

There is always the perception that there is not enough credit, but then creditors always say that there is plenty of credit for viable operations. So it will be there for viable operations.

I would say [credit] will be adequate, but that is hard to predict because it depends on the farm economy.

This is tough. If you look at land prices, it is really hard to buy something. Ten years from now, it will probably be impossible. The Farm Credit headquarters is good, but most of the

other lenders are not doing agriculture anymore; it is easier for them to do housing. So it will be a challenge.

Interviewees saw new or young farmers (including those willing to be farm operators in the county 10 years from now) as a critical component. Most interviewees saw opportunities for the next-generation farmer but few opportunities for new farmers because of land costs.

In 20 years, it will be very difficult. The average farmer here is 55 to 58. Very seldom is it that you have sons or daughters who want to take over.

As long as parents set the kids up right and educate them as to the farm being a business, there will be enough young farmers coming off the farms. However, it is a rare instance where someone from outside the family would take over the farm.

I don't see the new farmers coming in to afford land. The younger "family" generation will take over.

For large-scale farms, there will be a problem. That does concern me. Increasingly the state and federal governments do not want to focus on 4-H and vocational training. They are losing a focus on that area.

I think a lot of people want to farm, but not a lot of new people are coming in because of the cost of farmland, the lack of labor, and the cost of other inputs.

I don't know of young people trying to seek a farm to establish themselves. Most work elsewhere and grow small acreage on the side—sell direct to the consumer. There will probably be more of these—more part-time farmers on small acreage.

Section IIIC: Land for Farming and Agricultural Land Preservation Programs in Carroll County

Current Situation: Land for Farming in Carroll County

Farmland in Carroll County has decreased 12% since the 1987 agricultural census; in 1987 there were almost 167,000 acres of farmland, and by 2002 this number was just over 147,000. The percentage of farmland that was leased remained fairly stable, hovering around half of all farmland; at this rate, it is clear that the county's farmers rely on rented land to a large extent.

Survey respondents reported that purchasing county farmland is not affordable (Table 11); only 3% said it is affordable and a full 49% found it not at all affordable. In terms of rented land, more respondents found it affordable, but the responses still paint a sobering picture, with 27% reporting rented land as very affordable or affordable, and 26% not very or not at all affordable.

Groups of respondents	On the whole very affordable	Affordable	Not very affordable	Not at all affordable	Not sure or no response
Farmland to purchase	0	3	24	49	23
Farmland to rent	3	24	20	6	47

Interviews with agricultural leaders reinforced the survey responses. Recently, appraisals of fair market value conducted on behalf of the Maryland Agricultural Land Preservation Foundation and the Carroll County Agricultural Land Preservation Program averaged \$10,426 per acre for agriculturally zoned land. Some comments from interviewees about the availability and affordability of farmland are as follows:

In terms of land, we have a lot of land, but it is very expensive. Small producers end up on remainder pieces, which often aren't the greatest-quality soils. We are not putting the highest-value crops on the highest-quality land.

We've had land preservation programs around for a long time. These are wonderful for established farms. The problem is that when the property sells, it still goes for \$750,000 to \$1 million on 100 acres because we have so many wealthy people in the region that are buying second homes. These folks may rent their land out to grain farmers.

Cash rents are not as bad in Carroll County as in some counties, but it is getting worse. Some acres are going for \$10,000 an acre. This is okay if you are already here and already farming, but not for the new farmers, unless you have horses and the money.

The producer is competing against the developer and larger operator who can pay more dollars (even a few extra) per acres. When I say larger operator, I am talking about over 800 acres. So, small and midsized farmers do not have as much access to farmland because they don't have the leverage.

Prices are driven by two factors. Pressure for development for individual lots is one of these. Lot prices have increased greatly because they are limited. Sewer and water access are also limited. People are looking for rural lots next to preserved farms. These types of lots have doubled in value over the last few years. They are going for \$250,000 for three acres. This is really driving up the value of farms. Also, some people will come up and put \$1.5 million into a farm because they want the land, instead of building a mansion somewhere else. Even preserved farms are going for \$5,000 an acre, for just land. About one-third of the farms on the market are preserved-land farms.

If I look back to the situation 10 years ago, those who are expanding are going to have a hard time finding rentable land and will not be able to find land to buy. One exception is horse farmers—they are probably fine because they have the money.

There are fewer acres to buy and rent. The competition for rental land is extreme. And affordable acres are getting less. From 10 years ago, competition for these lands is much stiffer.

Small farms have an easier time meeting needs. When I think about small farms, I think about horse farms, leisure farms, vegetables and greenhouses. When you talk about production agriculture (grains, dairy, poultry), it is difficult for them to find enough land to make it work.

Programs to Support Farmland in Carroll County

Carroll County has a number of local policy tools used to support farmland preservation and farm viability. Below are the main ones used in the county.

1) **Easement programs.** By the end of June 2007, through a combination of several different programs, Carroll County had 51,296 total acres preserved by easements (see Appendix B for details). As stated in the master plan for Carroll County, the county's goal for permanently preserved agricultural acres is 100,000 acres.⁸ The master plan notes, however, if the current trends continue, only 73,000 acres are likely to be preserved. The county's easement programs are funded through a combination of county general funds, the county's share of agricultural transfer tax, general obligation bonds, and state funds. The Carroll County Agricultural Land Preservation Program staff is housed in the Department of Planning. A five-member citizens' Agricultural Land Preservation Advisory Board, appointed by the county commissioners, advises the program. (See <http://ccgovernment.carr.org/ccg/agpres/default.asp>).

(a) *The Maryland Agricultural Land Preservation Foundation (MALPF)* program is designed to preserve prime farmland through the purchase of conservation easements that prohibit development of the property. The program was formed in 1977, with the first easements by 1980. By June 30, 2007, a total of 40,421 acres from 338 farms in Carroll County were preserved through MALPF. Easement properties are concentrated in the western portion of the county.

(b) *Carroll County Agricultural Land Preservation Program.* In addition to MALPF-held easements, the county purchases and holds its own easements with county funds. Established in 2002, the program is designed to supplement rather than compete with MALPF. By June 30, 2007, this program had enrolled another 49 farms with a total of 5,077 acres.

(c) *The Maryland Environmental Trust (MET) and the Carroll County Land Trust (CCLT)*, both nonprofit entities, accept donated easements. By June 30, 2007, a total of 1,730 acres were preserved on 24 farms.

(d) *The Rural Legacy Program*, established by the state in 1998, provides funding to county governments and private land trusts to preserve land within specific areas. The county selects an area of the county and applies to the state for funds to purchase permanent conservation easements from landowners who voluntarily participate in the program. Easements are held jointly by the county commissioners and MALPF or other qualified organizations. Since 1998, Carroll County has preserved 4,068 easement acres on 41 properties in the Little Pipe Creek and Upper Patapsco Rural Legacy Area.

(e) Supporting policy: *The Carroll County Critical Farms Program* assists contract purchasers and new owners who want to use preservation funds to help acquire a farm. The program is designed to provide 75% of easement value in a relatively short period of time. After receiving the county minimum easement payment, the new owner puts the farm in the regular MALPF program and applies to sell an easement in competition with all other county easement sale applicants. If MALPF acquires the easement, the county funds are reimbursed. After five years, if the owner has been unable to sell an easement to MALPF, the county exercises its option and acquires the easement with no additional payment, or the landowner

⁸ Carroll County, Board of County Commissioners, 2000, *Carroll County Challenges and Choices: A Master Plan for the Future—Managing Growth*. December 20.

may elect to terminate the option by repaying the county with interest. At the end of June 2004, all the Critical Farms options had become permanent MALPF easements.

(f) **Supporting policy: Tax credits for donated easements:** In 2001, Maryland started offering income tax credit for donations of easements to the MET and MALPF. The tax credit gives landowners an opportunity to use up to \$80,000 of the value of an easement as a credit against their state income tax over a 16-year period. In 2001, the county commissioners also adopted the Carroll County tax credit for donated easements. The proposed tax credit applies to the open-space assessment and the assessment of one home site for easements donated to the Maryland Environmental Trust or other qualified land trust such as the Carroll County Land Trust. The credit is for a period of 15 years.

2) **Agricultural zoning.** Agricultural zoning covers approximately 150,000 acres. The zoning calls for a basic residential density of one unit to 20 acres (1:20). However, since 1978 owners were allowed to carve out two additional residential lots, such as for their children. Therefore, from 100 acres there could be a total of 7 lots. In addition, the current zoning ordinance (May 2008) permits at least one additional lot for parcels of 6 to 20 acres, two for parcels over 20 to 40 acres, and one for every increment of 20 acres beyond 40. A study by the county found an effective density in the agricultural zoning district of about 1:15. There has been an effort to locate the residential lots along public roads rather than in the midst of farmed parcels.

3) **Agricultural tax assessment:** In Maryland productive agricultural and forested lands receive a “preferential tax assessment” whereby the land is taxed, by state law, based on its use rather than its value as residential land.

4) **Right-to-farm laws:** Carroll County has a right-to-farm law, chapter 173 of the county code, which addresses conflicts between traditional agricultural uses and the new residential areas. Every real estate transaction has a “right to farm” form to sign whereby those buying land in the county learn about the rights of farmers in Carroll County. There is also a Farm Reconciliation Committee that mediates complaints between farmers and nonfarmers. Interviewees reported that these have been used rarely in the last decade.

Opinions of Carroll County Farmland Owners and Agricultural Leaders about Farmland Programs

In the survey, farmland owners were asked their opinions of the various policy tools in Carroll County affecting agriculture and farmland. Overwhelmingly, the survey respondents supported the *purchase of development rights programs* in the county (86% either “strongly supported” or “supported”), while only 9% opposed the programs (Table 12). Program managers also cited the high level of support from county residents and farmers.

Table 12. Carroll County—Survey Respondents’ Support of Purchase of Development Rights Programs in the County (n = 114)				
Strongly support	Support	Oppose	Oppose strongly	Not sure or did not answer
Percentage				
50	36	7	2	6

Agricultural leaders generally supported the purchase of development programs as well, although some of them also talked about their concerns:

The agricultural preservation programs have us at 45,000 acres. These will never be developed—if we don't get a test case. What I might be concerned about is that a few farms are coming up to the 25-year mark where they might be allowed by the county to come out of the preservation programs if agriculture is deemed not viable any more. This may be tested soon.

The preservation program will shape the area by the permanent limitation of development of land in the agricultural zone. The land base is there and will stay in farming. Farms are more apt to stay when these programs are here. Preserved farms with no development are more apt to stay with farming. The preservation programs will keep nuisance complaints and traffic on roads down. With 45,000 acres preserved, we've eliminated road traffic and one of farmers' biggest complaints is about road traffic.

Buyers are interested in whether the land around them is preserved. Preserved farmland gives credibility to farming.

The obvious answer is yes, the programs are important to the future viability of agriculture in the county. But my concern is the application process, and sometimes there is money, and sometimes there isn't money. But my concern is that the farms preserved are not always on the best ground. Our best ground is in the south where all the development pressure is.

The majority of the people in the county want to be near open farmland, so they are supportive.

Agricultural tax assessment laws were seen by survey respondents as being very helpful in keeping property taxes at acceptable levels, with 63% reporting them as either very helpful or moderately helpful (Table 13). Only 4% said they are not helpful. Agricultural leaders were not directly asked about the agricultural tax assessment laws.

Survey respondents also felt that the *right-to-farms laws* have been helpful in protecting farmers against unfair nuisance complaints (Table 13); 55% reported them as either very helpful or moderately helpful, and only 4% said they are not helpful at all. Of the total survey respondents, only 11% reported complaints from nonfarm residents near their agricultural land in Carroll County; 20% among operators with gross sales of \$50,000 or more. Interviewees tended to view the right-to-farm law as a signal of the county and state support of the agricultural sector, but they were a bit more vague on the assistance that the law actually provides to farming:

It is effective as a signal to the agricultural sector, but the ordinance is not important to keeping an economically viable agricultural sector.

It hasn't been used much, but I think it is important: prospective buyers of farms know it is there, and prospective nonfarm buyers are made aware of the right-to-farm laws.

Nuisance complaints really haven't been too much of a problem. We don't have as much concentration of the animal units as maybe elsewhere.

Zoning restrictions were given a much more mixed response among survey respondents in how helpful they have been in maintaining an adequate supply of land for farming (Table 13). Only 25% reported them as either very helpful or moderately helpful, while 29% said they were somewhat helpful, and 19% said they are not helpful. There were few conversations with agricultural leaders that included the agricultural zoning; those who did discuss this policy tool felt that, while the support for agricultural zoning has been mixed in the farming community in the past, zoning is important to the overall preservation farms in the county.

The two programs (PDR and agricultural zoning) together give me hope for the place. We have 45,000 acres preserved. And we never rezone the remainders. So we have another 14,000 acres in remainders that will not be rezoned.

[Agricultural zoning] has been adequate but sometimes a nuisance. The major change—the downzoning [reducing the number of housing units permitted per square mile or other quantity of land]—was done back when it didn’t affect people as much as it would now. In hindsight, it has been a plus for Carroll County for preservation of farmland.

The bulk of remainders are being farmed by those leasing the land. Very few are being farmed by farmers that built out and stayed. Some were owned by developers, and then sold as a horse farm.

There have been no challenges, surprisingly, to agricultural zoning. One challenge of agricultural zoning is annexation of agricultural land into the seven corporate towns. Annexation can occur with or without approval from the county commissioners within five years of announcement. That is the biggest challenge right now. We’ve just been through one in the southeast side. Citizen opposition to the annexation was high. There have been no major challenges, however.

Ag zoning is critical to the preservation program. It pushes the development in but also allows the program to be affordable. It gives us time to bring people into the program. We couldn’t afford the program with one-fifth or one-tenth zoning. We are already wondering if we can afford to bring in some of the large farms.

Table 13: Carroll County—Survey Respondents’ Assessment of Policies Affecting Agriculture and Farmland

Type of policy	Never heard of policy	Policy not helpful	Policy somewhat helpful	Policy moderately helpful	Policy very helpful	Not sure or did not answer
(n = 114)	Percentage					
Agricultural tax assessment	5	4	20	14	49	9
Right-to-farm law	9	4	21	24	31	13
Zoning restrictions	7	19	29	17	8	20

Opinions about the Future Adequacy of Farmland in Carroll County

Agricultural leaders were asked their opinion about whether they thought farmland would be adequate 10 years from now, or in 2015. Most people interviewed thought that the land would be adequate but very expensive; some noted that it would be adequate for the type of agriculture that would be left. Quite a few noted that the agricultural preservation and zoning programs are key to the future adequacy of farmland.

Land will get tougher and tougher to get, but we won't lose much.

In 10 years, there will be a noticeable decrease. In 20 years, it will be significant and I'm basing this on what I've seen in Montgomery, Howard, and Frederick counties.

It will be adequate only as far as county zoning and farmland protection programs allow. If they move away from these programs, the county will lose it.

This will be fairly stable. We'll lose some, but not at a fast rate.

It will be adequate. You won't see the attrition of land in 10 years.

For those that want to stay in farming, there will be land. If the farming community had their way, they would stay in farming. But with all the pressures—pressure to sell, increase in traffic, for example—families don't want to farm. I think it will decline.

The supply will be adequate, but the price is questionable. There is still a lot of land in family farms and the agricultural preservation program.

Because of the preservation program, we have 45,000 acres preserved. In 10 years, we will have fewer acres, but it should be adequate under the conditions we'll have here. There will be different things being raised with less land.

I think it will be adequate. It may start to be more challenging at that point—in 10 years.

Section IV: The Future of Agriculture in Carroll County: Results of the Survey with Landowners and Interviews with Agricultural Leaders

We asked the survey respondents and the interviewees a number of questions to gauge optimism or pessimism about the future of agriculture in the county and their own plans with farming.

Survey Respondents Plans for Farming in the Future in Carroll County

When asked about plans for farming into the future, 46% of survey respondents said they were planning to be farming in the county 10 years from now, 23% were not planning to be farming, while 32% either were not sure or did not respond to the question. Of those respondents under 55 years of age, 77% are planning to stay. Most respondents do not have plans for changing much about their farm operations over the next five years, with the exception of livestock (see Table 14): 19% of respondents are planning to increase livestock numbers, and 11% are planning to increase the number of separate kinds of livestock on their farm over the next five years. Almost

half of the respondents (47%) reported that they would make at least one investment on their property in the next five years.

Table 14: Carroll County—Plans to Change Aspects of the Farm Operation over the Next Five Years			
Aspects of farm operation	Increase	Decrease	Stay about the same
<i>N</i> = 140	Percentage		
Farmed acres owned	6	2	50
Farmed acres rented	4	5	41
Numbers of livestock	19	6	28
Number of separate crops grown	6	4	43
Number of separate kinds of livestock	11	3	39
Change in at least one of the five ways above	34	18	
Erecting, replacing, or enlarging farm buildings	29		
Building or extending farm fences	36		
Installing or improving conservation or irrigation facilities	31		
Other investments	6		
At least one type of investment	47		

Analysis: Characteristics of the Likelihood to Be Farming in Five to Ten Years

We used regression analysis again to look at what conditions would impact the likelihood that a respondent would continue farming five or ten years from now. In terms of the analysis for *five years* from now, only one significant predictor was found. Not surprisingly, other things being equal, as the age of the respondent increases, the respondent is less likely to be farming in the County five years from the survey.

The results of the regression analysis for respondents reporting that they would continue to farm for at least another *10 years* includes:

- Not surprisingly, as age of the farmer increased, he or she was less likely to expect to be farming in the county 10 years hence.
- Holding age and other causal variables constant, we found that those respondents who believed local government sided with non-farmers in controversies with farmers were also less likely to continue farming that long.
- Another negative relationship was between having a succession plan and expecting to farm for another ten years in the county. Perhaps many of the plans were prompted by the assumption of an exit before then.
- In contrast, if the respondent had lined up a son, daughter, or grandchild to succeed him as operator, he or she was *more* likely to farm that long, possibly because the farmer has an incentive to hold the operation together or improve it for the sake of that child or grandchild.

In our Carroll County survey, 28% of the responding agland owners said they did have succession plans, 12% reported that a plan was under consideration, and 57% said no plan was developed. Owner-operator respondents were also asked who would likely farm the land once he or she retired from farming: 56% said some type of relative would be farming the land, and this would be a son, daughter, grandson or granddaughter (54%) or some other relative (2%). Another 7% said someone outside the family would be farming the land, while 19% were not sure. As noted earlier, agricultural leaders reported that one major challenge to the future viability of farming in the county was the entry of new farmers (either the next generation or those new to farming).

Table 15. Carroll County—Expectations of Development of Farmland by 2015 among Respondents

Percentage of farmland expected to be developed	1–49 acres	50–79 acres	180–499 acres	500–999 acres	All farms
<i>N</i> = 132	Number				
0%	31	34	12	—	77
1%–24%	10	6	2	1	19
24%–49%	3	1	1	1	6
50%–74%	4	1	1	—	6
75%–99%	3	4	—	—	7
100%	1	1	—	—	2
Not sure	5	8	2	—	15
Total	57	55	18	2	132

We also asked survey respondents about their plans for developing their farmland by 2015 (Table 15). Almost 60% said they had no plans to develop their lands (0% would be developed). The majority of these owned smaller-acreage farms. Another 14% said that 1%–24% of the land would be developed, including one of the largest farms responding to the survey. Almost 10% said that between 24% and 74% of the land would be developed, and only two respondents (of small-acreage farms) responded that 100% of the land would be developed. Eleven percent of respondents were not sure whether any land would be developed.

Analysis: Likelihood of Farmland Development

When we used regression analysis to see if gross farm sales and other plausible causal factors made a difference in whether respondents expected at least some of their owned land to be developed, four significant predictors resulted. Other things being equal:

- Respondents who used seasonal labor were more likely to believe that some of their farmland would be developed in the next 10 years.
- Those who experienced no change in farming operations for the worse because of nonfarmers living nearby were *less* likely to believe that some of their farmland would be developed in the next 10 years.
- Respondents who found right-to-farm laws as very helpful or moderately helpful in protecting farmers against unfair nuisance complaints were also less likely to believe any of their farmland would be developed in the next 10 years.

- Finally, as the respondents' percentage of household income derived from the farm operation increases, the respondents are also less likely to believe any of their farmland would be developed in the next 10 years.

Opinions on Long-Term Viability of Farming in Carroll County

Agricultural leaders were asked what the county's agriculture would look like in 10 years, or in the year 2015. Most believe that the land in farming will not be dramatically decreased, although many see consolidation in the larger farms and an increase in smaller farms. Most also thought that dairies would continue to decrease and saw no real sharp changes in farm products being raised, although many mentioned that small farmers using direct markets would likely increase a bit. On the other hand, a few agricultural leaders saw endless possibilities for farmers in terms of marketing to the population centers of the region, and a few had a bleak outlook for all farming in the county.

We've been in a trend of losing midsized farms—farms are getting larger and smaller. There will be a small number of larger farmers, because they need to expand to stay viable. There will be an increase in the smaller farms, but these will be part-time and niche operations with outside income. In terms of agricultural products, there will be a modest shift to vegetables and fresh produce, pick-your-own, on-farm sales of sugar corn and in-season food, all benefiting from the increasing population. I see this increase, but I should say it won't be a dramatic shift, just a slight one. Most of the land will stay in corn or soybeans and wheat, barley, and hay. The number of dairy herds will decrease. In terms of the dairy farms, I hear from the farmers all the time that it is farm income hurting them more than development pressure.

We will do similar products; I don't see a change in commodities. We do these commodities well. This will be true even for small farms. There will be a decrease in farmer numbers and an increase in farm size. We will see less full-time operators and more part-time operators. The farm will be supplemented with off-farm income.

The grain people will stay with the size. They are 1,000–2,000 acres and they have to stay with the size. There will be smaller farms for people who like those things; it is their hobby, like putting in a winery.

The southern end will be developed: below Route 140, there may be 20 farmers. The western part will still be in dairy and grain farming, as well as some of the Hampstead and Manchester areas (although those will continue to feel the development pressure). There will be no changes in major products and fewer dairy operations. Meat and nutrient management requirements will limit these. There may be some growth in small farms, although they may not grow a crop themselves; 5–20 acres moving into horses or pleasure farming. In grain, there will be a handful that gets larger. A handful of farmers will look at organics. There are attempts at direct-marketing cooperatives currently, but I don't know if they will get off the ground. They need a University of Maryland person to help, and they just lost that person.

I think agriculture is a flexible industry. It takes on so many different forms. I don't think we will see as much traditional agriculture. We already have about a third less dairies in the county. It is getting more and more difficult to move around the large equipment. I think as more development occurs, we will see a demand for farms and farm enterprises,

but it will be more horse operations, greenhouses, pick-your-own, for example. Many farms close to towns will change hands, and you will see an all-new generation of farm families and agricultural tourism.

There will be a steady, slow decline. There are less family members who want to be on the farm and an increase in traffic. The farmers getting bigger are spending 10%–20% of their time moving equipment and on logistics because their land parcels are not contiguous. Farm products will not change to a large degree. There are a lot more beef cattle now. Dairy has a strong presence and I don't think that will change much. The grain folks have changed some to hay.

I think that in the future of agriculture in 10 years, if we hold the land base, there will be good opportunities here. In 20 years, and the further out you go, the better the future is. We have all the population centers here and access to those markets. All the surrounding counties and states are working on farmland preservation, too. We are so close to these markets—and I think this is where the future is, so close to populations.

I see dairy extremely diminished. I see the crossroads communities turning to bedroom communities. I see excellent opportunities for high-quality products and marketing them, and a need for education of farmers for things like grading. I see a lot of opportunities left in Washington, DC, and Baltimore, but there will be problems with distribution.

I think there will be fewer livestock operations and much of that has to do with development and environmental regulations. I see an increase in the numbers of horses in the county and opportunities for horse activities through public and private avenues.

The general tone for me is very scary for someone who values home-grown. I am generally an optimistic person. I am more optimistic for the organic and the horticulture because those markets are soaring. I am worried about the dairy, beef, and livestock.

Analysis: Likelihood of a Positive Outlook for Agriculture in the County

To get directly at the issue of the long-term future of agriculture in the county, we asked both survey respondents and the interviewees the question, “Thinking ahead 20 years, what kind of future do you see for agriculture in Carroll County?” Overall, Carroll County’s survey respondents seemed a bit pessimistic: only 8% responded that the future was “bright,” while 36% said it was “modest.” Forty-six percent said the future looked “dim,” while only 1% said “none at all” (9% did not respond or responded “not sure”).

When using regression analysis to examine respondents with a more “positive” outlook, we combined the “bright” and “modest” respondents to form a relatively positive group and then hypothesized various causes for their positions. We found that, other things being equal, the likelihood of being in this group:

- *Greatly increased* if they were very satisfied or moderately satisfied with the profitability of marketing outlets available in 2005;
- *increased* if the respondent felt that local authorities tended to be even-handed when complaints about farm operations arose;
- *increased* if the respondent had relatively a lot of hay being raised on his or her owned land..

All of the agricultural leaders also reported dim to modest prospects for farming:

We may figure out new ways of doing it. I haven't thought about it. Modest. I would say dim, but I don't want to go there. I think we'll figure it out.

All of this area will be in houses. I guess I'd say modest—not dim and not bright. A lot of it depends on issues such as where environmental regulations.

Dim, unless something happens to address growth. No matter how much land you preserve, though, most of it will turn into houses. Other areas of the country are more economical to produce food than houses. Without good leaders soon, agriculture will not be saved.

Modest to dim. I don't perceive Maryland as being an agriculture-friendly state. And with the population increase . . . we are a bedroom community of Baltimore and Washington, DC. Labor is going to continue to get tighter because no one wants to do farm work. The income is not there for what the value of the land is and people will sell it. I don't know how people will continue.

Another way we sought to get at the question of future viability of the farming sector in the county was to ask agricultural leaders interviewed whether they would recommend “a smart, hard-working young person with an agricultural background be a farm operator in Carroll County.” Of the 16 interviewees that answered the question, four said “no,” five said “yes,” while six said that “it depends.”

If I was 25 and starting all over again, I would be looking for cheaper land. I would move. Property costs on the East Coast are too high. It cannot generate the income to service the debt. There is the chance that you could work with a relative and work your way into a farm situation.

If I was a farmer myself, I wouldn't think about Carroll County. If I was a son or daughter of a current farmer, maybe I'd take over from my parents—if the land was reasonably priced by my parents. Otherwise, if I really wanted to set myself up in a profitable business, I would look at Pennsylvania or New York. Carroll County is just too close to Baltimore. Acres are selling at \$5,000–\$6,000 and upwards of \$10,000.

It depends on what they grow. If they get into custom production. For grains or dairy, I would say they would have to get in with someone already established.

Farm ownership is almost impossible here. For a new farmer, you need a 200-acre base for the asset base alone. If you are just renting, it won't work. I would have somebody go up to western Pennsylvania or western New York. I would not want to farm land here, personally.

Absolutely. You can make money in production agriculture or in other areas. But it is all about management. I go back to the example of dairy. Lots of farms are going out of business, but lots are doing very well. Is there a future for agriculture in the county—yes. But it is all about management. It is like any other business. If you manage it well, you will do well. I have a lot of faith in agriculture in this county for the future.

If they are smart, there are significant opportunities for an aggressive person.

Sure, without hesitation. If you talk to Extension agents, there are many family farm members who are deciding not to farm in the future. But there are many individuals who enjoy it and are determined to do it—some take up farming in their 60s. It is just something they want to do. That is where the preservation program can really do good. It gives them a chance to get the land—farms are preserved and these people couldn't compete with builders and developers on the open market if the land wasn't preserved. It makes it possible for the next generation.

Yes, but it certainly depends. A grain farmer won't be making a lot of money. Specialty marketing, rotational grazing—those types of things would be great.

If they have nothing (no money, land), and they were my kids, I'd tell them to find something else to do.

Opinions about Future Emphasis for Support of Agriculture in Carroll County

We also asked the survey respondents to tell us what they thought interested citizens should do about the viability of farming in Carroll County over the next 20 years (Table 16). Over a third (36%) said that activities should be undertaken to protect the land from development through actions such as agricultural easements (PDR) or agricultural zoning. Another third (31%) said that equal emphasis should be given to the goals of farmland protection and more profitable farming. Thirteen percent said actions should be taken to help farmers to farm more profitably, while 6% said “do nothing and let the private market guide things.”

Options	Percentage
<i>N</i> = 140	
Help to protect land from development through purchases of development rights or zoning	36
Give equal emphasis to the objectives of farmland protection and more profitable farming	31
Not sure or did not respond	14
Help farmers to farm more profitably	13
Do nothing: let the private market forces guide things	6

Appendix A: Survey Respondents Demographics

Appendix Table 1: Carroll County—Gross Farm Sales and Owned or Leased Land of Survey Respondents Who Were Owner-Operators							
Gross sales categories	1–9 acres	10–49 acres	50–179 acres	180–499 acres	500–999 acres	1,000+ acres	All farms
	<i>Number of operations</i>						
Less than \$10,000	4	24					28
\$10,000 to \$49,999		1	14	3			18
\$50,000 to \$99,999			1	4			5
\$100,000 to \$249,999				2	2		4
\$250,000 to \$499,999	1				4		4
\$500,000 and above						1	1
Total	5	25	15	9	6	1	61

Appendix Table 2: Carroll County—Production Acreage and Animal Numbers			
Type of acreage (n = 84)	Average acres	Maximum acres reported	Percentage of respondents reporting this type of production (n = 140)
Vegetable, melons, sweet corn, potatoes	1.3	35	
Fruits, nuts, and berries	0.1	1	4
Nursery, greenhouse, floriculture, sod, and mushrooms	0	0	1
Grains (corn, soybeans, wheat, barely, oats, etc.)	83	899	41
Hay and other forage crops	36	300	47
Woodland crops (e.g., Christmas trees)	3	45	11
Pasture, livestock yards, paddocks, stables	14	100	
Aquaculture	0.05	1	1
CRP and other acres not in production in 2005	9	330	15
Other use	3	75	9
No crops grown on land			39
One crop grown on land			19
Two separate crops grown on land			26
Three separate crops grown on land			
Four separate crops grown on land			3
Type of animals (n = 57)	Average number	Maximum number reported	
Hog and pigs	3	90	
Dairy cattle and calves	22	400	
Beef cattle and calves	18	140	
Poultry for meat or eggs	8	200	
Horses	3	40	
Sheep	17	500	
Fish	2	100	
Other	6	200	

Appendix Table 3: Carroll County—Gross Farm Sales	
Gross farm sales categories	Percentage
<i>N</i> = 63	
Less than \$10,000	48
\$10,000 to \$49,999	27
\$50,000 to \$99,999	8
\$100,000 to \$249,999	6
\$250,000 to \$499,999	8
\$500,000 and above	3

Appendix Table 4: Carroll County—Percentage of Household Income from Farm Operation	
Percentage of household income	Percentage of farms
<i>N</i> = 70	
Zero	19
1% to 24%	41
25% to 49%	13
50% to 74%	7
75% to 99%	9
100%	6

Appendix B: Statistics for Carroll County Easement Programs (source Carroll County Department of Planning)

CARROLL COUNTY LAND PRESERVED BY A RECORDED DEED OF EASEMENT														
June 30, 2007														
Fiscal Year	Maryland Ag. Land Preservation Foundation						Rural Legacy Program		Carroll County Easement Program		Land Trust Easements (MET and/or CCLT)		Total All Programs	
	MALPF Conventional Funding		MALPF 100% County Funding		Total MALPF Program		Farms	Acres	Farms	Acres	Farms	Acres	Farms	Acres
	Farms	Acres	Farms	Acres	Farms	Acres								
Through 1996	180	23,568	4	472	184	24,040			0	0	7	534	191	24,574
1997	13	1,043	4	480	17	1,523			1	100	3	153	21	1,776
1998	12	1,718	6	738	18	2,456			0	0	1	24	19	2,480
1999	9	1,066	7	862	16	1,928			0	0	1	10	17	1,938
2000	11	1,172	5	459	16	1,631	11	879	0	0	1	18	28	2,528
2001	8	881	15	1,949	23	2,830	8	872	0	0	1	149	32	3,851
2002	8	743	11	994	19	1,737	6	643	1	89	2	108	28	2,577
2003	6	492	5	492	11	984	8	880	1	42	1	135	21	2,041
2004	0	0	9	923	9	923	3	382	10	1,080	2	342	24	2,727
2005	4	301	3	273	7	574	2	212	13	1,427	3	120	25	2,333
2006	7	553	4	348	11	901	2	156	17	1,641	1	121	31	2,819
2007	5	690	2	204	7	894	1	44	6	698	1	16	15	1,652
Totals	263	32,227	75	8,194	338	40,421	41	4,068	49	5,077	24	1,730	452	51,296