

Summary Measures of the Economic Importance of Agri-food Industries in Buena Vista County, Iowa

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This summary report provides county-level statistics for Buena Vista County, Iowa as a supplement to *The Economic Importance of Agri-food Industries in Iowa*¹ (hereafter referred to as the "state report"). Throughout this summary, local data will be presented that reflects the data provided in the state report. Brief descriptions of the data will be provided along with references back to the state report for more detailed explanations of the data and its use.

Table 1 shows that Buena Vista County had 825 farms in 2002. These farms averaged 414 acres apiece compared to an average of 350 acres per farm, statewide. Nationwide, farms are generally larger than in Iowa. The average US farm included 441 acres in 2002. The estimated market value of land and buildings per farm in Buena Vista County was \$1,207,278 in 2002, compared to \$808,152 for Iowa and \$604,403, nationwide. In 2002, Buena Vista County farms marketed an average of \$257,862 worth of farm products according to the US Census of Agriculture.

Table 1. Buena Vista County Farm Statistics from the US Census of Agriculture

	Buena Vista County		Iowa		United States	
	2002	1997	2002	1997	2002	1997
Number of farms	825	904	90,655	96,705	2,128,982	2,215,876
Land in farms (acres)	341,677	366,225	31,729,490	32,313,119	938,279,056	954,752,502
Average farm size (acres)	414	405	350	334	441	431
Market value, per farm, of						
Land and buildings (\$)	1,082,507	868,212	707,730	559,678	537,833	416,007
Machinery and equipment (\$)	124,771	101,021	100,422	79,607	66,570	53,861
Farm products sold (\$)	257,862	235,467	135,388	125,766	94,245	90,880

Table 2 shows employment data for Buena Vista County and the state of Iowa compiled within a framework used by the US Department of Agriculture (USDA) to identify a broad range of farm and farm-related employment. These numbers are a reduced set of the statistics provided as Table 4 in the state report. The USDA compiles these employment numbers annually for each of the 50 states². For this summary, we have used the USDA classification system and data from the US Bureau of Economic Analysis and the Iowa Department of Workforce Development to generate similar results for Buena Vista County. Detail is restricted in this summary, due to the smaller employment base and privacy issues at the county level.

¹ Mark Imerman, David Swenson, Liesl Eathington, Daniel Otto. Iowa State University Department of Economics. 2005.

² The USDA's definition of farm-related industries includes all food-based businesses through retailing and restaurants. Substantial portions of packaging manufacture, of gravel and lime extraction, and apparel manufacturing are also included. A discussion of the implications of the breadth of this framework is included on pages 6-9 of the state report.

Table 2. USDA-style Compilation of 2002 Farm and Farm-related Employment (Jobs)

	Buena Vista County			Iowa	
	Jobs	As a percent of County total	State Category	Jobs	% of state total
Farm and closely-related	3,355	24.33	1.66	201,967	10.57
Peripherally-related	1,143	8.29	0.60	191,669	10.04
Total farm and farm-related	4,498	32.62	1.14	393,636	20.61
Total employment	13,791	100.00	0.72	1,909,934	100.00

Data derived from the US Bureau of Economic Analysis and the Iowa Department of Workforce Development within a framework obtained from the USDA.

Tables 3 and 4 estimate the value of a more restricted definition of the agri-food industries for Buena Vista County. These tables are consistent with Tables 5 and 6 in the state report. Estimates included in these tables limit the agri-food industries to ag production (traditional farm production and nonfarm production facilities), food and other primary farm commodity processing, and ag input manufacturing (machinery, ag chemicals, and fertilizer)³.

Table 3 provides value estimates for an industry-only aggregation of the economic activity that takes place within Buena Vista County's borders. Output is the value of total in-county production for each industry in 2002. Value-added is the value that was added to Output by each industry's in-county production process. The difference between Output and Value-added is the value of purchased inputs that go into the production process. For individual industries, these inputs may be sourced from out-of-county or from within the county. Value-added represents the value of Output minus the value of purchased inputs. Table 3 also provides an estimate of jobs⁴ and labor income (compensation for employees and proprietors) within the agri-food industries in Buena Vista County.

Table 3 shows that, in 2002, the total output value of Buena Vista County's agricultural production industry was \$190.784 million. \$67.166 million of this output (35.21 percent of the total output value) was the value added to the output by Buena Vista County's ag production activity (ag production's value added). The remainder came from purchased inputs into the process (from either in-county or out-of-county sources). 59.35 percent of this value added, or \$39.861 million, was paid out as compensation to the 1,894 production agriculture jobs in Buena Vista County.

³ Estimates were generated through a process of recompiling and analyzing statistics derived from the IMPLAN database system maintained by MIG, Inc. A detailed discussion of the estimates presented here, the differences between the two tables, and how they can be interpreted is provided in pages 9 through 17 of the state report.

⁴ Jobs do not refer to the number of people working or to full-time-equivalent employment. Jobs can be full or part time. A single individual can hold multiple jobs. In short, jobs cannot be looked upon as interchangeable or comparable across industries, businesses, or location. Comparisons of wages and compensation are more appropriate in an economic value context.

Table 3. Industry-only Estimation Based on IMPLAN and Census Data

Buena Vista County		Labor		Value-Added	
Agricultural Production	Output*	Jobs	Income*	Value*	Pct. Of Tot.
Oilseeds	32.761	170	10.779	17.614	3.17
Grain	47.199	370	11.305	21.375	3.85
Other Crops	1.975	5	0.533	1.300	0.23
Cattle	18.744	68	0.118	1.331	0.24
Poultry	31.089	33	3.919	10.149	1.83
Hogs and Pigs	45.558	559	2.851	7.075	1.27
Other Ag Production	13.458	689	10.356	8.322	1.50
Sum of Ag Production	190.784	1,894	39.861	67.166	12.09
Primary Food Processing					
Crop	0.000	0	0.000	0.000	0.00
Dairy	0.000	0	0.000	0.000	0.00
Meat	741.955	2,441	88.843	103.249	18.58
Sum of Primary Food Proc.	741.955	2,441	88.843	103.249	18.58
Other Food/Ag Processing					
Animal and Pet Foods	15.483	30	1.478	2.101	0.38
Other Food Processing	0.747	7	0.225	0.393	0.07
Sum of Other Ag Proc.	16.230	37	1.703	2.494	0.45
Ag Input Manufacturing					
Ag Chemical and Fertilizer	0.000	0	0.000	0.000	0.00
Farm Machinery	5.776	26	0.838	1.579	0.28
Sum of Ag Input Mfg.	5.776	26	0.838	1.579	0.28
Sum of All Agri-food Ind.	954.745	4,398	131.245	174.488	31.41
NonAg Industries	624.579	8,874	239.301	381.113	68.59
Totals	1,579.324	13,272	370.546	555.601	100.00

* Numbers represent millions of dollars

If we add food and other ag processing and ag input manufacturing to agricultural production, the value of Buena Vista County's agri-food industry output was \$954.745 million, or 60.45 percent of Buena Vista County's total industrial production. Of this, \$174.488 million (18.28 percent) was value added within these industries in Buena Vista County. \$131.245 million of this value added was paid out as wages and salaries to the 4,398 agri-food industry jobs in the county.

Overall, Table 3 shows that Buena Vista County's agri-food industries directly accounted for 60.45 percent of the county's total output, 31.41 percent of total value added, 35.42 percent of labor income, and 33.14 percent of the county's jobs⁵.

⁵ It is unusual but possible for counties to have negative output, value-added, and labor income values in some categories, resulting in negative percents of totals. Where this happens, it is generally due to write-downs of assets and proprietor interests due to firm closings or bankruptcies, market situations where output must be sold at less than production costs, or reverse flows of incomes, pensions, or benefits.

Table 4. Industry-of-output aggregation including local inputs

Buena Vista County	Value Added				
	As a Percent of				
	Nonhousehold				
Agricultural Production	Output*	Income*	Value Added*	Total V.A.	Demand
Oilseeds	45.318	17.922	25.683	4.62	5.10
Grain	57.615	19.731	29.156	5.25	5.79
Other Crops	1.085	0.431	0.706	0.13	0.14
Cattle	0.138	0.016	0.028	0.01	0.01
Poultry	0.645	0.152	0.251	0.05	0.05
Hogs and Pigs	4.162	0.664	1.110	0.20	0.22
Other Ag Production	8.466	4.855	5.349	0.96	1.06
Sum of Ag Production	117.428	43.770	62.283	11.21	12.37
Primary Food Processing					
Crop	0.000	0.000	0.000	0.00	0.00
Dairy	0.000	0.000	0.000	0.00	0.00
Meat	966.344	144.776	208.345	37.50	41.37
Sum of Primary Food Proc.	966.344	144.776	208.345	37.50	41.37
Other Food/Ag Processing					
Animal and Pet Foods	21.452	3.670	5.463	0.98	1.08
Other Food Processing	0.137	0.048	0.075	0.01	0.01
Sum of Other Ag Proc.	21.588	3.718	5.538	1.00	1.10
Ag Input Manufacturing					
Ag Chemical and Fertilizer	0.000	0.000	0.000	0.00	0.00
Farm Machinery	6.720	1.452	2.339	0.42	0.46
Sum of Ag Input Mfg.	6.720	1.452	2.339	0.42	0.46
Sum of All Agri-food Ind.	1,112.081	193.716	278.505	50.13	55.30
NonAg Industries	385.278	158.687	225.089	40.51	44.70
Household Consumption	81.966	188.839	52.007	9.36	10.33
Totals	1,579.324	541.242	555.601	100.00	110.33

* Numbers represent millions of dollars

Table 4 shows a different aggregation of the county's industrial output. Table 4 is derived from the same data as is Table 3, and total values for Table 4 are identical to total values for Table 3. The difference is the point at which values were counted. In Table 3, values were counted in each industry where productive activity took place. In Table 4, values were counted at the industry that made the final export (out-of-county) sale of goods and services produced⁶. This is final demand analysis. It helps illustrate the magnitude of inter-industrial linkages and the value of those linkages to local income generation from export sales⁷.

⁶ Goods not sold out of county were counted under the heading of "Household Consumption" and not in industry totals in Table 4.

⁷ The point at which final products are sold out-of-county was chosen as an endpoint because it coincides with the point at which industrial output brings revenue into the county. This point also avoids problems

Table 4 reallocates all industrial activity in the county to the sectors producing goods for sale beyond the county's borders (export sale). This means that if there is a local meat packer that purchases all of its live cattle from local farmers, the output value, value-added, and personal income generated in the production of those cattle is aggregated up to the meat packing industry. Similarly, the value of locally produced farm machinery purchased for use on local farms is not included in the aggregation under farm machinery, but is subsumed under agricultural production (and partially subsumed, again, into food processing if the farm output that it was used to produce passes through local food processors on its journey to final sale outside of the county). In a nutshell, the output, value-added, and income estimates in Table 4 estimate the total share of the local economic activity utilized to generate final output from the agri-food sectors.

Under this aggregation, the total exported output value of locally produced goods and services supporting Buena Vista County's agricultural production industry was \$117.428 million. \$62.283 million of this output (53.04 percent of the total output value) was the value added to the output by economic activity within Buena Vista County (value added). The remainder came from inputs purchased from out-of-county sources. 70.28 percent of this value added, or \$43.770 million, was paid out as personal income to residents of Buena Vista County that were involved (as workers, owners, investors, etc) in these activities.

If we add food and other ag processing and ag input manufacturing to agricultural production, the export value of goods and services supporting Buena Vista County's agri-food industry output was \$1,112.081 million, or 70.41 percent of Buena Vista County's total industrial production. Of this, \$278.505 million (25.04 percent) was value added within these industries in Buena Vista County. \$193.716 million of this value added was paid out as personal income.

Overall, Table 4 shows that exports from Buena Vista County's agri-food industries accounted for 70.41 percent of the county's total output, 50.13 percent of total value added, and 35.79 percent of the county's personal income.

Table 5. Crop Statistics From the U.S. Census of Agriculture

	Buena Vista County		Iowa	
	2002	1997	2002	1997
Value of All Farm Products Sold*	212,736	212,862	12,273,634	12,162,165
Value of Crops Sold*	79,349	93,945	6,071,272	6,381,676
Total Cropland Harvested (acres)	305,632	324,361	23,994,343	24,008,826
Corn for grain	155,329	162,645	11,761,392	11,930,542
Corn for silage and green-chop	1,777	2,898	247,269	244,913
Soybeans	144,212	154,866	10,418,621	10,258,681
Oats	803	1,449	143,513	214,485
Harvested forage crops	3,904	(NA)	1,533,027	(NA)
Bushels harvested				
Corn	23,893,505	22,871,024	1,851,276,224	1,581,093,092
Soybeans	7,067,356	7,294,980	487,380,897	459,309,682
Oats	61,447	123,735	10,761,952	14,451,930

* Values are in \$1,000s

that would accompany trying to separate local household consumption between that which consumes local food products and that which consumes food products imported from outside the county.

Table 5 shows Buena Vista County crop inventories and sales for 1997 and 2002. State statistics are included for comparison. Table 6 provides similar information for Buena Vista County livestock. Data in both tables comes from the US Census of Agriculture. In both tables “(NA)” entries denote categories where data was not collected or compiled, and “(D)” entries designate that data was collected but results were suppressed to comply with personal disclosure restrictions.

Table 6. Livestock Statistics From the U.S. Census of Agriculture

	Buena Vista County		Iowa	
	2002	1997	2002	1997
Value of All Farm Products Sold	212,736	212,862	12,273,634	12,162,165
Value of Livestock and Livestock Products Sold*	133,387	118,917	6,202,362	5,780,489
Hogs and Pigs				
Total inventory	314,097	296,162	15,486,531	14,513,319
Inventory of breeding stock	18,144	21,709	1,145,323	1,354,166
Number sold	810,256	602,625	41,232,492	27,340,921
Value of sales*	63,842	71,947	3,078,455	3,012,764
Cattle and Calves				
Total inventory	21,471	22,879	3,535,945	3,717,394
Beef cows	4,405	4,472	987,670	1,051,178
Milk cows	194	321	206,965	222,090
Number sold	24,425	26,522	2,929,704	2,936,978
Value of sales*	18,101	19,797	2,119,935	1,886,416
Value of Dairy Products Sold*	356	(D)	442,431	407,897
Poultry and Poultry Products				
Value of sales*	50,910	25,794	511,949	414,587
Inventory of layers 20 weeks and older	(D)	(D)	38,650,210	21,514,768
Broiler and meat-type chicken inventory	(D)	928	1,730,091	1,023,349
Broiler and meat-type chickens sold	975	715	9,558,127	6,919,963
Turkey inventory	1,216,000	652,179	3,681,862	2,552,845
Turkeys sold	2,543,409	1,633,552	9,145,415	7,279,822
Sheep and Goats and Related Products				
Value of sales	123	(NA)	23,366	(NA)
Inventory of sheep and lambs	1,096	3,220	249,908	272,913
Number of sheep and lambs sold	1,375	5,497	257,130	326,868

* Values are in \$1,000s

The first three data columns of Table 7 show aggregated annual earnings in thousands of dollars from farm employment, nonfarm employment, and totals employment in Buena Vista County from 1990 through 2003. The values are not adjusted for inflation. Note that nonfarm earnings steadily rise throughout the period. Total earnings rise, but with somewhat more variation. Farm earnings swing significantly from year-to-year. This is typical of earnings in economies with a substantial ag production sector.

The final three data columns of Table 7 show the data again. In Table 7, however, the data is differenced year-by-year. Entries for 1991, for example, are the difference between, change from, 1990 to 1991. Positive numbers denote unadjusted growth. Negative numbers denote unadjusted decline. This representation shows that nonfarm earnings tend to be growing over time, causing total earnings to trend upward over time. The variability in this growth, however, is strongly associated with the variability of farm earnings. This is due to the weather and market

factors that make production agriculture returns highly variable (which is also true of many basic mining industries).

While ag production's growth in most areas is limited by the availability of suitable land, its variability has a substantial effect upon rural areas. Even in urbanized areas, the difference between a good earnings year and a bad earnings year is often heavily influenced by conditions affecting agricultural production and marketing.

A more detailed state-level discussion and illustrations are included in the state report on pages 22 through 24.

Table 7. Annual Earnings and Annual Earnings Changes

Year	Annual County Earnings by Source			Annual Changes in County Earnings		
	Farm	Nonfarm	Total	Farm	Nonfarm	Total
1990	35,008	190,028	225,036	(NA)	(NA)	(NA)
1991	30,409	202,917	233,326	-4,599	12,889	8,290
1992	38,621	212,449	251,070	8,212	9,532	17,744
1993	18,140	223,675	241,815	-20,481	11,226	-9,255
1994	49,657	233,601	283,258	31,517	9,926	41,443
1995	41,285	244,580	285,865	-8,372	10,979	2,607
1996	71,992	250,260	322,252	30,707	5,680	36,387
1997	74,316	262,821	337,137	2,324	12,561	14,885
1998	48,108	283,053	331,161	-26,208	20,232	-5,976
1999	28,325	302,306	330,631	-19,783	19,253	-530
2000	27,701	319,031	346,732	-624	16,725	16,101
2001	30,310	317,007	347,317	2,609	-2,024	585
2002	25,982	336,787	362,769	-4,328	19,780	15,452
2003	18,868	341,611	360,479	-7,114	4,824	-2,290

Data from the US Bureau of Economic Analysis