

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

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This summary report provides county-level statistics for Mills 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 Mills County had 462 farms in 2002. These farms averaged 535 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 Mills County was \$1,066,166 in 2002, compared to \$808,152 for Iowa and \$604,403, nationwide. In 2002, Mills County farms marketed an average of \$104,151 worth of farm products according to the US Census of Agriculture.

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

	Mills County		Iowa		United States	
	2002	1997	2002	1997	2002	1997
Number of farms	462	535	90,655	96,705	2,128,982	2,215,876
Land in farms (acres)	247,254	246,088	31,729,490	32,313,119	938,279,056	954,752,502
Average farm size (acres)	535	460	350	334	441	431
Market value, per farm, of						
Land and buildings (\$)	965,971	744,262	707,730	559,678	537,833	416,007
Machinery and equipment (\$)	100,195	92,244	100,422	79,607	66,570	53,861
Farm products sold (\$)	104,151	117,287	135,388	125,766	94,245	90,880

Table 2 shows employment data for Mills 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 Mills 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)

	Mills County			Iowa	
	Jobs	County total	As a percent of State Category	Jobs	% of state total
Farm and closely-related	662	10.96	0.33	201,967	10.57
Peripherally-related	327	5.42	0.17	191,669	10.04
Total farm and farm-related	990	16.38	0.25	393,636	20.61
Total employment	6,043	100.00	0.32	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 Mills 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 Mills 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 Mills County.

Table 3 shows that, in 2002, the total output value of Mills County's agricultural production industry was \$47.013 million. \$20.701 million of this output (44.03 percent of the total output value) was the value added to the output by Mills 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). 55.26 percent of this value added, or \$11.440 million, was paid out as compensation to the 583 production agriculture jobs in Mills 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

Mills County		Labor		Value-Added	
Agricultural Production	Output*	Jobs	Income*	Value*	Pct. Of Tot.
Oilseeds	16.903	172	5.567	9.088	3.99
Grain	21.810	335	5.252	9.877	4.34
Other Crops	1.977	9	0.426	1.070	0.47
Cattle	4.747	34	0.044	0.336	0.15
Poultry	0.449	1	0.058	0.147	0.06
Hogs and Pigs	0.993	24	0.069	0.154	0.07
Other Ag Production	0.134	8	0.024	0.029	0.01
Sum of Ag Production	47.013	583	11.440	20.701	9.09
Primary Food Processing					
Crop	24.122	20	1.374	1.860	0.82
Dairy	0.000	0	0.000	0.000	0.00
Meat	0.000	0	0.000	0.000	0.00
Sum of Primary Food Proc.	24.122	20	1.374	1.860	0.82
Other Food/Ag Processing					
Animal and Pet Foods	10.051	19	1.143	1.624	0.71
Other Food Processing	0.000	0	0.000	0.000	0.00
Sum of Other Ag Proc.	10.051	19	1.143	1.624	0.71
Ag Input Manufacturing					
Ag Chemical and Fertilizer	9.490	22	2.303	2.857	1.25
Farm Machinery	0.000	0	0.000	0.000	0.00
Sum of Ag Input Mfg.	9.490	22	2.303	2.857	1.25
Sum of All Agri-food Ind.	90.676	644	16.260	27.042	11.87
NonAg Industries	291.284	4,323	136.059	200.721	88.13
Totals	381.960	4,967	152.319	227.763	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 Mills County's agri-food industry output was \$90.676 million, or 23.74 percent of Mills County's total industrial production. Of this, \$27.042 million (29.82 percent) was value added within these industries in Mills County. \$16.260 million of this value added was paid out as wages and salaries to the 644 agri-food industry jobs in the county.

Overall, Table 3 shows that Mills County's agri-food industries directly accounted for 23.74 percent of the county's total output, 11.87 percent of total value added, 10.68 percent of labor income, and 12.97 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

Mills County	Value Added				
	As a Percent of				
	Nonhousehold				
Agricultural Production	Output*	Income*	Value Added*	Total V.A.	Demand
Oilseeds	10.704	4.341	6.018	2.64	3.59
Grain	25.067	8.381	12.133	5.33	7.23
Other Crops	0.844	0.299	0.473	0.21	0.28
Cattle	6.412	0.781	1.355	0.60	0.81
Poultry	0.402	0.099	0.152	0.07	0.09
Hogs and Pigs	1.212	0.200	0.321	0.14	0.19
Other Ag Production	0.127	0.021	0.034	0.01	0.02
Sum of Ag Production	44.768	14.122	20.486	8.99	12.21
Primary Food Processing					
Crop	37.586	6.953	9.850	4.32	5.87
Dairy	0.000	0.000	0.000	0.00	0.00
Meat	0.000	0.000	0.000	0.00	0.00
Sum of Primary Food Proc.	37.586	6.953	9.850	4.32	5.87
Other Food/Ag Processing					
Animal and Pet Foods	12.881	2.298	3.266	1.43	1.95
Other Food Processing	0.000	0.000	0.000	0.00	0.00
Sum of Other Ag Proc.	12.881	2.298	3.266	1.43	1.95
Ag Input Manufacturing					
Ag Chemical and Fertilizer	10.251	2.942	3.722	1.63	2.22
Farm Machinery	0.000	0.000	0.000	0.00	0.00
Sum of Ag Input Mfg.	10.251	2.942	3.722	1.63	2.22
Sum of All Agri-food Ind.	105.486	26.315	37.323	16.39	22.24
NonAg Industries	190.486	100.591	130.478	57.29	77.76
Household Consumption	85.987	324.973	59.962	26.33	35.73
Totals	381.960	451.879	227.763	100.00	135.73

* 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 Mills County's agricultural production industry was \$44.768 million. \$20.486 million of this output (45.76 percent of the total output value) was the value added to the output by economic activity within Mills County (value added). The remainder came from inputs purchased from out-of-county sources. 68.94 percent of this value added, or \$14.122 million, was paid out as personal income to residents of Mills 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 Mills County's agri-food industry output was \$105.486 million, or 27.62 percent of Mills County's total industrial production. Of this, \$37.323 million (35.38 percent) was value added within these industries in Mills County. \$26.315 million of this value added was paid out as personal income.

Overall, Table 4 shows that exports from Mills County's agri-food industries accounted for 27.62 percent of the county's total output, 16.39 percent of total value added, and 5.82 percent of the county's personal income.

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

	Mills County		Iowa	
	2002	1997	2002	1997
Value of All Farm Products Sold*	48,118	62,749	12,273,634	12,162,165
Value of Crops Sold*	42,609	53,290	6,071,272	6,381,676
Total Cropland Harvested (acres)	203,926	191,758	23,994,343	24,008,826
Corn for grain	101,144	92,203	11,761,392	11,930,542
Corn for silage and green-chop	302	291	247,269	244,913
Soybeans	96,158	95,647	10,418,621	10,258,681
Oats	303	424	143,513	214,485
Harvested forage crops	5,960	(NA)	1,533,027	(NA)
Bushels harvested				
Corn	11,020,630	12,046,137	1,851,276,224	1,581,093,092
Soybeans	3,646,368	3,998,446	487,380,897	459,309,682
Oats	23,011	28,997	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 Mills County crop inventories and sales for 1997 and 2002. State statistics are included for comparison. Table 6 provides similar information for Mills 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

	Mills County		Iowa	
	2002	1997	2002	1997
Value of All Farm Products Sold	48,118	62,749	12,273,634	12,162,165
Value of Livestock and Livestock Products Sold*	5,508	9,459	6,202,362	5,780,489
Hogs and Pigs				
Total inventory	6,013	17,836	15,486,531	14,513,319
Inventory of breeding stock	497	2,765	1,145,323	1,354,166
Number sold	8,581	42,964	41,232,492	27,340,921
Value of sales*	749	3,645	3,078,455	3,012,764
Cattle and Calves				
Total inventory	10,217	14,867	3,535,945	3,717,394
Beef cows	4,280	5,981	987,670	1,051,178
Milk cows	-	85	206,965	222,090
Number sold	7,230	9,399	2,929,704	2,936,978
Value of sales*	4,584	5,467	2,119,935	1,886,416
Value of Dairy Products Sold*	-	137	442,431	407,897
Poultry and Poultry Products				
Value of sales*	(D)	7	511,949	414,587
Inventory of layers 20 weeks and older	180	342	38,650,210	21,514,768
Broiler and meat-type chicken inventory	-	325	1,730,091	1,023,349
Broiler and meat-type chickens sold	(D)	(D)	9,558,127	6,919,963
Turkey inventory	(D)	(D)	3,681,862	2,552,845
Turkeys sold	(D)	(D)	9,145,415	7,279,822
Sheep and Goats and Related Products				
Value of sales	(D)	(NA)	23,366	(NA)
Inventory of sheep and lambs	450	1,101	249,908	272,913
Number of sheep and lambs sold	551	867	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 Mills 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	9,663	89,835	99,498	(NA)	(NA)	(NA)
1991	9,645	93,007	102,652	-18	3,172	3,154
1992	12,803	95,038	107,841	3,158	2,031	5,189
1993	-4,140	96,434	92,294	-16,943	1,396	-15,547
1994	14,274	102,879	117,153	18,414	6,445	24,859
1995	1,708	105,153	106,861	-12,566	2,274	-10,292
1996	19,870	104,663	124,533	18,162	-490	17,672
1997	17,613	110,064	127,677	-2,257	5,401	3,144
1998	7,972	123,085	131,057	-9,641	13,021	3,380
1999	3,177	138,150	141,327	-4,795	15,065	10,270
2000	3,328	140,808	144,136	151	2,658	2,809
2001	2,110	138,083	140,193	-1,218	-2,725	-3,943
2002	2,773	146,058	148,831	663	7,975	8,638
2003	4,564	152,523	157,087	1,791	6,465	8,256

Data from the US Bureau of Economic Analysis