

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

Report prepared with funding from the Coalition to Support Iowa's Farmers  
 By Mark Imerman, David Swenson, Liesl Eathington, and Daniel Otto  
 Iowa State University Department of Economics  
 September 23, 2005

This summary report provides county-level statistics for Allamakee County, Iowa as a supplement to *The Economic Importance of Agri-food Industries in Iowa*<sup>1</sup> (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 Allamakee County had 1,083 farms in 2002. These farms averaged 301 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 Allamakee County was \$578,133 in 2002, compared to \$808,152 for Iowa and \$604,403, nationwide. In 2002, Allamakee County farms marketed an average of \$84,049 worth of farm products according to the US Census of Agriculture.

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

	Allamakee County		Iowa		United States	
	2002	1997	2002	1997	2002	1997
Number of farms	1,083	1,025	90,655	96,705	2,128,982	2,215,876
Land in farms (acres)	326,122	308,083	31,729,490	32,313,119	938,279,056	954,752,502
Average farm size (acres)	301	301	350	334	441	431
Market value, per farm, of						
Land and buildings (\$)	471,249	289,525	707,730	559,678	537,833	416,007
Machinery and equipment (\$)	106,884	67,063	100,422	79,607	66,570	53,861
Farm products sold (\$)	84,049	79,994	135,388	125,766	94,245	90,880

Table 2 shows employment data for Allamakee 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 states<sup>2</sup>. 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 Allamakee County. Detail is restricted in this summary, due to the smaller employment base and privacy issues at the county level.

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

<sup>2</sup> 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)

	Allamakee County			Iowa	
	Jobs	As a percent of County total	State Category	Jobs	% of state total
Farm and closely-related	2,387	24.92	1.18	201,967	10.57
Peripherally-related	529	5.53	0.28	191,669	10.04
Total farm and farm-related	2,917	30.45	0.74	393,636	20.61
Total employment	9,578	100.00	0.50	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 Allamakee 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)<sup>3</sup>.

Table 3 provides value estimates for an industry-only aggregation of the economic activity that takes place within Allamakee 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 jobs<sup>4</sup> and labor income (compensation for employees and proprietors) within the agri-food industries in Allamakee County.

Table 3 shows that, in 2002, the total output value of Allamakee County's agricultural production industry was \$76.636 million. \$25.573 million of this output (33.37 percent of the total output value) was the value added to the output by Allamakee 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). 48.76 percent of this value added, or \$12.469 million, was paid out as compensation to the 1,020 production agriculture jobs in Allamakee County.

<sup>3</sup> 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.

<sup>4</sup> 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

<b>Allamakee County</b>		<b>Labor</b>		<b>Value-Added</b>	
<b>Agricultural Production</b>	<b>Output*</b>	<b>Jobs</b>	<b>Income*</b>	<b>Value*</b>	<b>Pct. Of Tot.</b>
Oilseeds	6.853	74	2.250	3.685	1.10
Grain	19.434	318	4.599	8.801	2.62
Other Crops	14.880	67	2.871	7.901	2.35
Cattle	20.072	155	-0.006	1.442	0.43
Poultry	0.482	1	0.057	0.157	0.05
Hogs and Pigs	3.763	96	0.180	0.584	0.17
Other Ag Production	11.152	309	2.518	3.003	0.89
<b>Sum of Ag Production</b>	<b>76.636</b>	<b>1,020</b>	<b>12.469</b>	<b>25.573</b>	<b>7.61</b>
<b>Primary Food Processing</b>					
Crop	0.000	0	0.000	0.000	0.00
Dairy	65.957	119	6.547	21.868	6.51
Meat	295.542	1,112	34.507	39.217	11.67
<b>Sum of Primary Food Proc.</b>	<b>361.499</b>	<b>1,231</b>	<b>41.054</b>	<b>61.085</b>	<b>18.18</b>
<b>Other Food/Ag Processing</b>					
Animal and Pet Foods	0.000	0	0.000	0.000	0.00
Other Food Processing	0.943	10	0.268	0.469	0.14
<b>Sum of Other Ag Proc.</b>	<b>0.943</b>	<b>10</b>	<b>0.268</b>	<b>0.469</b>	<b>0.14</b>
<b>Ag Input Manufacturing</b>					
Ag Chemical and Fertilizer	0.000	0	0.000	0.000	0.00
Farm Machinery	0.000	0	0.000	0.000	0.00
<b>Sum of Ag Input Mfg.</b>	<b>0.000</b>	<b>0</b>	<b>0.000</b>	<b>0.000</b>	<b>0.00</b>
<b>Sum of All Agri-food Ind.</b>	<b>439.078</b>	<b>2,261</b>	<b>53.791</b>	<b>87.127</b>	<b>25.93</b>
<b>NonAg Industries</b>	<b>411.567</b>	<b>5,099</b>	<b>153.705</b>	<b>248.832</b>	<b>74.07</b>
<b>Totals</b>	<b>850.645</b>	<b>7,360</b>	<b>207.496</b>	<b>335.959</b>	<b>100.00</b>

\* Numbers represent millions of dollars

If we add food and other ag processing and ag input manufacturing to agricultural production, the value of Allamakee County's agri-food industry output was \$439.078 million, or 51.62 percent of Allamakee County's total industrial production. Of this, \$87.127 million (19.84 percent) was value added within these industries in Allamakee County. \$53.791 million of this value added was paid out as wages and salaries to the 2,261 agri-food industry jobs in the county.

Overall, Table 3 shows that Allamakee County's agri-food industries directly accounted for 51.62 percent of the county's total output, 25.93 percent of total value added, 25.92 percent of labor income, and 30.72 percent of the county's jobs<sup>5</sup>.

<sup>5</sup> 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

Allamakee County	Value Added				
	As a Percent of				
	Nonhousehold				
Agricultural Production	Output*	Income*	Value Added*	Total V.A.	Demand
Oilseeds	8.991	3.532	5.068	1.51	1.72
Grain	23.085	7.711	11.525	3.43	3.92
Other Crops	11.085	3.656	6.164	1.83	2.09
Cattle	0.337	0.047	0.085	0.03	0.03
Poultry	0.007	0.002	0.003	0.00	0.00
Hogs and Pigs	0.347	0.059	0.103	0.03	0.03
Other Ag Production	0.804	0.140	0.240	0.07	0.08
<b>Sum of Ag Production</b>	<b>44.657</b>	<b>15.147</b>	<b>23.187</b>	<b>6.90</b>	<b>7.88</b>
<b>Primary Food Processing</b>					
Crop	0.000	0.000	0.000	0.00	0.00
Dairy	79.398	16.475	30.410	9.05	10.34
Meat	377.594	54.267	77.686	23.12	26.40
<b>Sum of Primary Food Proc.</b>	<b>456.992</b>	<b>70.742</b>	<b>108.096</b>	<b>32.18</b>	<b>36.74</b>
<b>Other Food/Ag Processing</b>					
Animal and Pet Foods	0.000	0.000	0.000	0.00	0.00
Other Food Processing	0.165	0.056	0.087	0.03	0.03
<b>Sum of Other Ag Proc.</b>	<b>0.165</b>	<b>0.056</b>	<b>0.087</b>	<b>0.03</b>	<b>0.03</b>
<b>Ag Input Manufacturing</b>					
Ag Chemical and Fertilizer	0.000	0.000	0.000	0.00	0.00
Farm Machinery	0.000	0.000	0.000	0.00	0.00
<b>Sum of Ag Input Mfg.</b>	<b>0.000</b>	<b>0.000</b>	<b>0.000</b>	<b>0.00</b>	<b>0.00</b>
<b>Sum of All Agri-food Ind.</b>	<b>501.814</b>	<b>85.944</b>	<b>131.369</b>	<b>39.10</b>	<b>44.65</b>
<b>NonAg Industries</b>	<b>283.637</b>	<b>113.589</b>	<b>162.857</b>	<b>48.48</b>	<b>55.35</b>
<b>Household Consumption</b>	<b>65.194</b>	<b>165.512</b>	<b>41.734</b>	<b>12.42</b>	<b>14.18</b>
<b>Totals</b>	<b>850.645</b>	<b>365.046</b>	<b>335.959</b>	<b>100.00</b>	<b>114.18</b>

\* 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 produced<sup>6</sup>. 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 sales<sup>7</sup>.

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

<sup>7</sup> 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 Allamakee County's agricultural production industry was \$44.657 million. \$23.187 million of this output (51.92 percent of the total output value) was the value added to the output by economic activity within Allamakee County (value added). The remainder came from inputs purchased from out-of-county sources. 65.33 percent of this value added, or \$15.147 million, was paid out as personal income to residents of Allamakee 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 Allamakee County's agri-food industry output was \$501.814 million, or 58.99 percent of Allamakee County's total industrial production. Of this, \$131.369 million (26.18 percent) was value added within these industries in Allamakee County. \$85.944 million of this value added was paid out as personal income.

Overall, Table 4 shows that exports from Allamakee County's agri-food industries accounted for 58.99 percent of the county's total output, 39.10 percent of total value added, and 23.54 percent of the county's personal income.

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

	Allamakee County		Iowa	
	2002	1997	2002	1997
Value of All Farm Products Sold*	91,025	81,994	12,273,634	12,162,165
Value of Crops Sold*	28,508	22,530	6,071,272	6,381,676
Total Cropland Harvested (acres)	144,612	138,471	23,994,343	24,008,826
Corn for grain	61,997	64,928	11,761,392	11,930,542
Corn for silage and green-chop	6,581	6,859	247,269	244,913
Soybeans	28,935	17,790	10,418,621	10,258,681
Oats	5,554	7,542	143,513	214,485
Harvested forage crops	43,650	(NA)	1,533,027	(NA)
Bushels harvested				
Corn	9,554,607	8,424,348	1,851,276,224	1,581,093,092
Soybeans	1,478,436	785,335	487,380,897	459,309,682
Oats	400,888	464,720	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 Allamakee County crop inventories and sales for 1997 and 2002. State statistics are included for comparison. Table 6 provides similar information for Allamakee 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

	Allamakee County		Iowa	
	2002	1997	2002	1997
Value of All Farm Products Sold	91,025	81,994	12,273,634	12,162,165
Value of Livestock and Livestock Products Sold*	62,517	59,464	6,202,362	5,780,489
<b>Hogs and Pigs</b>				
Total inventory	79,652	69,073	15,486,531	14,513,319
Inventory of breeding stock	12,104	8,165	1,145,323	1,354,166
Number sold	229,844	143,677	41,232,492	27,340,921
Value of sales*	15,567	14,259	3,078,455	3,012,764
<b>Cattle and Calves</b>				
Total inventory	68,920	69,656	3,535,945	3,717,394
Beef cows	18,610	17,155	987,670	1,051,178
Milk cows	12,235	15,244	206,965	222,090
Number sold	30,009	32,455	2,929,704	2,936,978
Value of sales*	19,383	15,955	2,119,935	1,886,416
Value of Dairy Products Sold*	26,822	28,396	442,431	407,897
<b>Poultry and Poultry Products</b>				
Value of sales*	(D)	60	511,949	414,587
Inventory of layers 20 weeks and older	950	438	38,650,210	21,514,768
Broiler and meat-type chicken inventory	(D)	(D)	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)	-	9,145,415	7,279,822
<b>Sheep and Goats and Related Products</b>				
Value of sales	32	(NA)	23,366	(NA)
Inventory of sheep and lambs	894	673	249,908	272,913
Number of sheep and lambs sold	501	609	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 Allamakee 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	29,499	103,979	133,478	(NA)	(NA)	(NA)
1991	20,956	108,542	129,498	-8,543	4,563	-3,980
1992	25,136	116,923	142,059	4,180	8,381	12,561
1993	15,596	121,226	136,822	-9,540	4,303	-5,237
1994	25,592	130,669	156,261	9,996	9,443	19,439
1995	17,542	135,644	153,186	-8,050	4,975	-3,075
1996	29,717	140,666	170,383	12,175	5,022	17,197
1997	27,409	147,015	174,424	-2,308	6,349	4,041
1998	25,658	157,629	183,287	-1,751	10,614	8,863
1999	17,983	170,127	188,110	-7,675	12,498	4,823
2000	21,389	178,686	200,075	3,406	8,559	11,965
2001	19,566	186,302	205,868	-1,823	7,616	5,793
2002	19,515	198,605	218,120	-51	12,303	12,252
2003	14,041	201,437	215,478	-5,474	2,832	-2,642

Data from the US Bureau of Economic Analysis