

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

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This summary report provides county-level statistics for Kossuth 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 Kossuth County had 1,340 farms in 2002. These farms averaged 442 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 Kossuth County was \$1,156,391 in 2002, compared to \$808,152 for Iowa and \$604,403, nationwide. In 2002, Kossuth County farms marketed an average of \$194,789 worth of farm products according to the US Census of Agriculture.

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

	Kossuth County		Iowa		United States	
	2002	1997	2002	1997	2002	1997
Number of farms	1,340	1,468	90,655	96,705	2,128,982	2,215,876
Land in farms (acres)	591,814	601,406	31,729,490	32,313,119	938,279,056	954,752,502
Average farm size (acres)	442	410	350	334	441	431
Market value, per farm, of						
Land and buildings (\$)	1,026,962	904,137	707,730	559,678	537,833	416,007
Machinery and equipment (\$)	129,429	112,323	100,422	79,607	66,570	53,861
Farm products sold (\$)	194,789	169,192	135,388	125,766	94,245	90,880

Table 2 shows employment data for Kossuth 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 Kossuth 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)

	Kossuth County			Iowa	
	Jobs	As a percent of County total	State Category	Jobs	% of state total
Farm and closely-related	1,822	16.96	0.90	201,967	10.57
Peripherally-related	770	7.17	0.40	191,669	10.04
Total farm and farm-related	2,591	24.12	0.66	393,636	20.61
Total employment	10,742	100.00	0.56	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 Kossuth 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 Kossuth 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 Kossuth County.

Table 3 shows that, in 2002, the total output value of Kossuth County's agricultural production industry was \$242.248 million. \$87.752 million of this output (36.22 percent of the total output value) was the value added to the output by Kossuth 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). 55.24 percent of this value added, or \$48.476 million, was paid out as compensation to the 2,129 production agriculture jobs in Kossuth 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

Kossuth County		Labor		Value-Added	
Agricultural Production	Output*	Jobs	Income*	Value*	Pct. Of Tot.
Oilseeds	53.487	291	17.573	28.757	6.88
Grain	90.407	740	21.479	40.942	9.79
Other Crops	3.912	10	0.900	2.411	0.58
Cattle	25.979	101	0.049	1.863	0.45
Poultry	0.000	0	0.000	0.000	0.00
Hogs and Pigs	59.165	759	3.113	9.188	2.20
Other Ag Production	9.298	228	5.362	4.591	1.10
Sum of Ag Production	242.248	2,129	48.476	87.752	20.98
Primary Food Processing					
Crop	4.629	4	0.178	0.335	0.08
Dairy	0.000	0	0.000	0.000	0.00
Meat	6.602	31	0.744	0.905	0.22
Sum of Primary Food Proc.	11.231	35	0.922	1.240	0.30
Other Food/Ag Processing					
Animal and Pet Foods	32.406	61	3.343	4.801	1.15
Other Food Processing	0.705	3	0.023	0.058	0.01
Sum of Other Ag Proc.	33.111	64	3.366	4.859	1.16
Ag Input Manufacturing					
Ag Chemical and Fertilizer	3.647	9	0.682	1.231	0.29
Farm Machinery	0.000	0	0.000	0.000	0.00
Sum of Ag Input Mfg.	3.647	9	0.682	1.231	0.29
Sum of All Agri-food Ind.	290.237	2,237	53.446	95.082	22.73
NonAg Industries	574.522	6,810	208.899	323.137	77.27
Totals	864.759	9,047	262.345	418.219	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 Kossuth County's agri-food industry output was \$290.237 million, or 33.56 percent of Kossuth County's total industrial production. Of this, \$95.082 million (32.76 percent) was value added within these industries in Kossuth County. \$53.446 million of this value added was paid out as wages and salaries to the 2,237 agri-food industry jobs in the county.

Overall, Table 3 shows that Kossuth County's agri-food industries directly accounted for 33.56 percent of the county's total output, 22.73 percent of total value added, 20.37 percent of labor income, and 24.73 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

Kossuth County	Value Added				
	As a Percent of				
	Nonhousehold				
Agricultural Production	Output*	Income*	Value Added*	Total V.A.	Demand
Oilseeds	72.350	28.973	40.733	9.74	11.24
Grain	112.804	38.398	56.141	13.42	15.50
Other Crops	3.059	1.180	1.888	0.45	0.52
Cattle	32.780	3.749	6.582	1.57	1.82
Poultry	0.000	0.000	0.000	0.00	0.00
Hogs and Pigs	77.515	12.375	20.543	4.91	5.67
Other Ag Production	4.070	0.657	1.085	0.26	0.30
Sum of Ag Production	302.578	85.331	126.971	30.36	35.05
Primary Food Processing					
Crop	5.452	0.692	1.040	0.25	0.29
Dairy	0.000	0.000	0.000	0.00	0.00
Meat	6.372	1.042	1.493	0.36	0.41
Sum of Primary Food Proc.	11.823	1.734	2.533	0.61	0.70
Other Food/Ag Processing					
Animal and Pet Foods	44.262	8.104	11.905	2.85	3.29
Other Food Processing	0.665	0.099	0.158	0.04	0.04
Sum of Other Ag Proc.	44.927	8.203	12.063	2.88	3.33
Ag Input Manufacturing					
Ag Chemical and Fertilizer	1.721	0.460	0.690	0.17	0.19
Farm Machinery	0.000	0.000	0.000	0.00	0.00
Sum of Ag Input Mfg.	1.721	0.460	0.690	0.17	0.19
Sum of All Agri-food Ind.	361.050	95.728	142.257	34.01	39.27
NonAg Industries	416.764	158.332	219.995	52.60	60.73
Household Consumption	86.944	219.846	55.967	13.38	15.45
Totals	864.759	473.906	418.219	100.00	115.45

* 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 Kossuth County's agricultural production industry was \$302.578 million. \$126.971 million of this output (41.96 percent of the total output value) was the value added to the output by economic activity within Kossuth County (value added). The remainder came from inputs purchased from out-of-county sources. 67.21 percent of this value added, or \$85.331 million, was paid out as personal income to residents of Kossuth 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 Kossuth County's agri-food industry output was \$361.050 million, or 41.75 percent of Kossuth County's total industrial production. Of this, \$142.257 million (39.40 percent) was value added within these industries in Kossuth County. \$95.728 million of this value added was paid out as personal income.

Overall, Table 4 shows that exports from Kossuth County's agri-food industries accounted for 41.75 percent of the county's total output, 34.01 percent of total value added, and 20.20 percent of the county's personal income.

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

	Kossuth County		Iowa	
	2002	1997	2002	1997
Value of All Farm Products Sold*	261,017	248,373	12,273,634	12,162,165
Value of Crops Sold*	145,372	159,129	6,071,272	6,381,676
Total Cropland Harvested (acres)	543,736	549,421	23,994,343	24,008,826
Corn for grain	287,388	289,344	11,761,392	11,930,542
Corn for silage and green-chop	2,965	3,114	247,269	244,913
Soybeans	245,524	252,224	10,418,621	10,258,681
Oats	1,006	1,664	143,513	214,485
Harvested forage crops	5,218	(NA)	1,533,027	(NA)
Bushels harvested				
Corn	45,744,226	40,945,991	1,851,276,224	1,581,093,092
Soybeans	11,538,493	10,762,278	487,380,897	459,309,682
Oats	82,588	126,049	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 Kossuth County crop inventories and sales for 1997 and 2002. State statistics are included for comparison. Table 6 provides similar information for Kossuth 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

	Kossuth County		Iowa	
	2002	1997	2002	1997
Value of All Farm Products Sold	261,017	248,373	12,273,634	12,162,165
Value of Livestock and Livestock Products Sold*	115,645	89,245	6,202,362	5,780,489
Hogs and Pigs				
Total inventory	423,442	319,591	15,486,531	14,513,319
Inventory of breeding stock	17,529	32,725	1,145,323	1,354,166
Number sold	991,508	653,397	41,232,492	27,340,921
Value of sales*	82,760	64,590	3,078,455	3,012,764
Cattle and Calves				
Total inventory	31,462	30,385	3,535,945	3,717,394
Beef cows	5,801	4,931	987,670	1,051,178
Milk cows	632	1,029	206,965	222,090
Number sold	31,433	29,886	2,929,704	2,936,978
Value of sales*	25,087	20,906	2,119,935	1,886,416
Value of Dairy Products Sold*	(D)	2,140	442,431	407,897
Poultry and Poultry Products				
Value of sales*	(D)	730	511,949	414,587
Inventory of layers 20 weeks and older	2,787	9,583	38,650,210	21,514,768
Broiler and meat-type chicken inventory	468	2,235	1,730,091	1,023,349
Broiler and meat-type chickens sold	310	8,142	9,558,127	6,919,963
Turkey inventory	72	76	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	139	(NA)	23,366	(NA)
Inventory of sheep and lambs	2,055	3,874	249,908	272,913
Number of sheep and lambs sold	1,647	4,844	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 Kossuth 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	42,074	147,069	189,143	(NA)	(NA)	(NA)
1991	13,955	147,979	161,934	-28,119	910	-27,209
1992	43,688	157,634	201,322	29,733	9,655	39,388
1993	-4,524	160,849	156,325	-48,212	3,215	-44,997
1994	58,670	162,460	221,130	63,194	1,611	64,805
1995	38,577	167,260	205,837	-20,093	4,800	-15,293
1996	72,697	176,680	249,377	34,120	9,420	43,540
1997	74,903	186,945	261,848	2,206	10,265	12,471
1998	49,696	198,606	248,302	-25,207	11,661	-13,546
1999	21,120	205,600	226,720	-28,576	6,994	-21,582
2000	35,731	214,082	249,813	14,611	8,482	23,093
2001	15,836	228,121	243,957	-19,895	14,039	-5,856
2002	27,720	240,941	268,661	11,884	12,820	24,704
2003	25,745	251,448	277,193	-1,975	10,507	8,532

Data from the US Bureau of Economic Analysis