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Jobs and Value Added from Agricultural Production, Processing, and Services in Iowa, 2025

John Crespi*, Director, Center for Agricultural and Rural Development, Iowa State University, jcrespi@iastate.edu

*Corresponding Author

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Executive Summary

For this policy brief, I estimated the impact to Iowa's State Gross Domestic Product (GDP), or "value added" for 60 industries encompassing agricultural production, processing or agricultural adjacent industries. Value added is the contribution to GDP, the difference between the sales output and the cost of intermediate inputs used to produce the output. I used an economic impact model maintained by the IMPLAN Group, LLC, Huntersville, NC (IMPLAN), which is often called an input-output (IO) production model. In this model, think of all industries in the economy as feeding inputs into each other to produce outputs that are then sold to consumers or sold to another industry along a supply chain. IO models make adjustments for imports and exports as well as government services while accounting for employment and taxes to the various industrial sectors in order to calculate how much additional value is added to the economy, as opposed to only examining sales receipts. IO models determine the linkages between and among different industries in the production of goods and services in the economy and can measure how dollars spent in one industry impact another.

My definition of agricultural industries includes farm production (e.g., soybeans), processing of production into a new, manufactured product (e.g., soymeal, biodiesel), as well as the creation of products used in agricultural production (e.g., nitrogen fertilizer) and affiliated services like veterinary services. The specific industries as well as their general definitions are shown in table 1. I based my definitions on those provided by IMPLAN. Along with the IMPLAN industry codes, table 1 also provides the 6-digit North American Industrial Classification System (NAICS) codes. Readers curious about the components of each industry can consult the documentation provided by these two establishments for more detail.[1] One thing to notice is that some industries are quite broad. Ethanol, for example, is encompassed in the larger "other organic chemical" industry. Researchers are limited to the industries as defined by the NAICS and the government agencies that collect the data, and although future research could attempt to create specific industries in IO models, I do not attempt to do so here.

[1] The US Census provides definitions for the NAICS codes at: https://www.census.gov/naics/?58967?yearbck=2022. IMPLAN (2017a; 2017b) discusses how data are collected by IMPLAN and Nealy (2024) discusses the definitions used for IMPLAN's industries and how they relate to the NAICS codes.

As discussed in an earlier CARD document (Crespi 2024), relying on data collected by a variety of agencies in federal and state governments, an IO model determines the production linkages of an economy's industries. IMPLAN uses a Leontief production function that assumes inputs are used in fixed proportions by value. Once measured, the interactions of the inputs to production across the economic system and along its supply chains can be related to government agency data creating an economic snapshot of an economy's linkages. Economists recognize that assuming fixed proportions technologies for production functions is sometimes problematic, however IO models are regularly used in economic development studies because they allow hypothesizing changes to an industry's employment or revenue to measure the impacts on the rest of the productive inputs in the economic model. For this study, I use IMPLAN's Industry Contribution Analysis (ICA) tool.[2] ICA can be used to gauge the aggregate economic importance of a particular industry, in this case, the industries noted in table 1, on the rest of the Iowa economy.

As in Crespi (2024), I take a conservative approach whereby I remove the effects along the supply chain for these industries where the industry is interacting with itself, so as to focus only on the impacts of an industry on the rest of the economy. Under industry contribution analysis, IMPLAN measures a variety of economic effects (see Crespi 2024 for an example using IMPLAN to determine direct, indirect and induced impacts from agricultural production). In this Policy Brief, I present the employment and value added (GDP) results of the model for the agricultural production, processing and other industries in table 2. Following previous studies by Iowa State University researchers and others, I also present the results by Iowa Congressional District as well as for the state.[3]

Table 2 shows the economic impact of industry 11 on the rest of the economy where "Jobs" is IMPLAN's estimate of the number of jobs created in the economy ("Jobs" in IMPLAN can be both full and part time and do not directly match full-time employment (FTE) often used in other studies). With a state population in 2024 of about 3.2 million and 2.1 million jobs, agriculture and agriculturally related industries in Iowa contributed almost 416,000 or 19.4% of the jobs in the state. The "GDP Linked" portion of table 2 is shown in aggregate as well as by each of the industry types (production, processing, other). This is also called the "Value Added" of the industries because it measures only the additional value of each industry to the state GDP. Table 2 shows that the value added to Iowa from its agricultural and agriculturally adjacent industries ranged from $9 billion to $21.3 billion by congressional district in 2024 and contributed approximately $63 billion to the state's economy. This $63 billion represented about 23.4% of the state of Iowa's 2024 GDP.

[2] For a fuller discussion on contribution analysis, see Lucas (2019) and Miller and Blair (2022, pp. 310–316).
[3] Council for Agricultural Research, Extension and Teaching (various reports from 2015–2025) and Decision Innovation Solutions (2024).

Table 1. Industries Examined

Line #	Industry	IMPLAN (528) codes	NAICS codes
	Production		
1	Oilseed farming	1	111110, 111120, 111191
2	Grain farming	2	111130, 111140, 111150, 111160, 111199
3	Vegetable and melon farming	3	111211, 111219
4	Fruit farming	4	111310, 111320, 111331, 111332, 111333, 111334, 111336, 111339
5	Tree nut farming	5	111335
6	Greenhouse, nursery, and floriculture production	6	111411, 111419, 111421, 111422
7	All other crop farming	10	111940, 111992, 111998
8	Beef cattle ranching and farming, including feedlots and dual-purpose ranching and farming	11	112111, 112112
9	Dairy cattle and milk production	12	112120
10	Poultry and egg production	13	112310, 112320, 112330, 112340, 112390
11	Animal production, except cattle and poultry and eggs	14	112210, 112410, 112420, 112511, 112512, 112519, 112910, 112920, 112930, 112990
12	Forestry, forest products, and timber tract production	15	113110, 113210
13	Commercial logging	16	113310
14	Commercial fishing	17	114111, 114112, 114119
15	Commercial hunting and trapping	18	114210
16	Support activities for agriculture and forestry	19	115111, 115112, 115113, 115114, 115115, 115116, 115210, 115310
17	Other nonmetallic mineral mining and quarrying	29	212390
	Processing		
18	Dog and cat food manufacturing	58	311111
19	Other animal food manufacturing	59	311119
20	Flour milling	60	311211
21	Wet corn milling	63	311221
22	Soybean and other oilseed processing	64	311224
23	Fats and oils refining and blending	65	311225
24	Breakfast cereal manufacturing	66	311230
25	Nonchocolate confectionery manufacturing	69	311340

Line #	Industry	IMPLAN (528) codes	NAICS codes
	Processing, continued.		
26	Chocolate and confectionery manufacturing from cacao beans	70	311351
27	Confectionery manufacturing from purchased chocolate	71	311352
28	Frozen specialties manufacturing	73	311412
29	Canned fruits and vegetables manufacturing	74	311421
30	Cheese manufacturing	77	311513
31	Dry, condensed, and evaporated dairy product manufacturing	78	311514
32	Fluid milk manufacturing	79	311511
33	Creamery butter manufacturing	80	311512
34	Ice cream and frozen dessert manufacturing	81	311520
35	Frozen cakes and other pastries manufacturing	82	311813
36	Poultry processing	83	311615
37	Animal, except poultry, slaughtering	84	311611
38	Meat processed from carcasses	85	311612
39	Rendering and meat byproduct processing	86	311613
40	Bread and bakery product, except frozen, manufacturing	88	311811, 311812
41	Cookie and cracker manufacturing	89	311821
42	Dry pasta, mixes, and dough manufacturing	90	311824
43	Tortilla manufacturing	91	311830
44	Roasted nuts and peanut butter manufacturing	92	311911
45	Other snack food manufacturing	93	311919
46	Coffee and tea manufacturing	94	311920
47	Flavoring syrup and concentrate manufacturing	95	311930
48	Mayonnaise, dressing, and sauce manufacturing	96	311941
49	Spice and extract manufacturing	97	311942
50	All other food manufacturing	98	311991, 311999
51	Breweries	101	312120
52	Wineries	102	312130
53	Distilleries	103	312140
	Other Ag-Related Manufacturing or Services		
54	Other basic organic chemical manufacturing (incl. ethanol, biodiesel, methane from digesters)	155	325193, 325194, 325199

Line #	Industry	IMPLAN (528) codes	NAICS codes
	Other, continued.		
55	Nitrogenous fertilizer manufacturing	159	325311
56	Phosphatic fertilizer manufacturing	160	325312
57	Fertilizer mixing	161	325314, 325315
58	Pesticide and other agricultural chemical manufacturing	162	325320
59	Farm machinery and equipment manufacturing	252	333111
60	Veterinary services	449	541940

Table 2. Economic Impact on Iowa and Iowa's Congressional Districts (2025 dollars)

Measure	District 1	District 2	District 3	District 4	State Total
Population (2024)	863,760	791,635	779,014	807,078	3,241,488
Total Jobs (2024)	547,689	523,288	561,857	506,735	2,139,569
Jobs Linked to Ag-Related Industries	65,992	96,093	58,196	138,890	415,835
Percentage of Ag-Related Total Employment	12.0%	18.4%	10.4%	27.4%	19.4%
Total GDP in $ Billions (2024)	64.0	63.3	82.4	59.5	269.2
GDP Linked to Ag-Related Industries in $ Billions	10.4	14.7	9.0	21.3	62.9
Production (crops, livestock, forestry, fishing, etc.) in $ Billions	3.4	5.9	2.9	10.8	25.4
Processing (food & kindred, ethanol)	4.5	5.5	4.0	8.3	26.1
Other Ag-Related Manufacturing and Services (chemicals, machinery, etc.) in $ Billions	2.6	3.3	2.1	2.2	11.4
Ag-Related Percentage of Total GDP	16.3%	23.2%	10.9%	35.8%	23.4%

Notes: The sum of economic values for districts will not equal the total state values because of the IMPLAN model's construction of local industries. Districts refer to Iowa's congressional districts.

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