

## Contributions of Iowa's Agriculture and Related Industries: Analysis by Congressional District

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This brief report measures the unique contributions to Iowa's gross domestic product and employment attributable to agriculture in partnership with value added agricultural manufacturing and other ag-related manufacturing industries. The analysis describes the overall importance of these industries, including their linkages with supplying firms and effects of their workers' spending in the economy. The information was prepared for the Council for Agricultural Research, Extension and Teaching (CARET) 2010 Report to Iowa Senators and Representatives in the United States Congress.

### Summary Table

	Congressional Districts					State of Iowa
	1	2	3	4	5	
Population (2008)	589,520	612,893	634,689	596,917	568,536	3,002,555
Total employment (2008)	384,707	414,567	479,358	361,551	353,749	1,993,934
Jobs Linked to Ag-Related Industries	66,834	58,739	37,942	83,664	102,616	366,777
Percentage of total employment	17.4%	14.2%	7.9%	23.1%	29.0%	18.4%
Total GDP in \$ billions (2008)	24.34	28.31	34.86	24.08	21.59	133.17
GDP Linked to Ag-Related Industries (\$billions)	5.26	4.88	3.16	6.90	7.68	29.36
Percentage of total GDP	21.6%	17.2%	9.1%	28.7%	35.6%	22.0%

### Methodology

This analysis employs separate economic input-output (I-O) models for each of the five congressional districts and for the state of Iowa. The modeling exercise begins with a definition of the industries of interest, referred to as the "direct sectors." They include Agricultural Production; Agricultural Services, Forestry, and Commercial Logging, Fishing, Hunting & Trapping; Food and Beverage Manufacturing; Ethanol Manufacturing; Farm Equipment Manufacturing; Fertilizer Manufacturing; and Pesticide, and Other Agricultural Chemicals Manufacturing. Each of the six I-O models measures the region's direct sectors in terms of total output, value added, and employment.

After measuring the economic activity attributable to the direct sectors, the model estimates the amount of "indirect" economic activity that is stimulated in all supplying sectors including transportation and warehousing, wholesaling, banking and finance, households, and others. Finally, the models estimate the "induced" economic effects of the household spending by workers in the direct and indirect industries. The whole modeling exercise yields an estimate of the total economic importance (or "impact") of the direct sectors on the Iowa economy.

## Definitions

- ▶ **Direct Values.** Direct values measure the size of the industry or industries of interest.
- ▶ **Indirect and Induced Values.** Indirect values measure the amount of economic activity that is generated within supplying sectors by the input purchases made by the industry of interest. Induced values measure the amount of economic activity that is stimulated by household spending of workers in the direct and the indirect industries.
- ▶ **Impact Values.** The total economic impacts, or economic effects, of an industry are equal to its direct values plus all of its indirect and induced effects. The impact values describe the amount of total economic activity in the region that is linked to the industries of interest.
- ▶ **Employment.** Employment equals the number of full-time and part-time jobs.
- ▶ **Gross Domestic Product (GDP).** GDP, or “value added,” refers to the contributions toward the value of a product made by the various factors of production (land, labor, capital) within the region.

## Notes

The economic impact values for the state as a whole slightly exceed the sum of values for the individual congressional districts. This difference is due to the fact that individual districts may import some of their production inputs from other districts within the state. The purchases from outside suppliers represent economic leakages, and they reduce the total economic impact of the direct industries within the region. However, because these cross-district transactions are internal to the state, they are captured within the statewide model.

## Detailed List of Direct Industries Used in the IMPLAN<sup>i</sup> Input-Output Models

<u>IMPLAN Code</u>	<u>Description</u>
1	Oilseed farming
2	Grain farming
3	Vegetable and melon farming
4	Fruit farming
5	Tree nut farming
6	Greenhouse, nursery, and floriculture production
7	Tobacco farming
8	Cotton farming
9	Sugarcane and sugar beet farming
10	All other crop farming
11	Cattle ranching and farming
12	Dairy cattle and milk production
13	Poultry and egg production
14	Animal production, except cattle and poultry and eggs
15	Forestry, forest products, and timber tract production
16	Commercial logging

<u>IMPLAN Code</u>	<u>Description</u>
17	Commercial Fishing
18	Commercial hunting and trapping
19	Support activities for agriculture and forestry
41	Dog and cat food manufacturing
42	Other animal food manufacturing
43	Flour milling and malt manufacturing
44	Wet corn milling
45	Soybean and other oilseed processing
46	Fats and oils refining and blending
47	Breakfast cereal manufacturing
48	Sugar cane mills and refining
49	Beet sugar manufacturing
50	Chocolate and confectionery manufacturing from cacao beans
51	Confectionery manufacturing from purchased chocolate
52	Nonchocolate confectionery manufacturing
53	Frozen food manufacturing
54	Fruit and vegetable canning, pickling, and drying
55	Fluid milk and butter manufacturing
56	Cheese manufacturing
57	Dry, condensed, and evaporated dairy product manufacturing
58	Ice cream and frozen dessert manufacturing
59	Animal (except poultry) slaughtering, rendering, and processing
60	Poultry processing
61	Seafood product preparation and packaging
62	Bread and bakery product manufacturing
63	Cookie, cracker, and pasta manufacturing
64	Tortilla manufacturing
65	Snack food manufacturing
66	Coffee and tea manufacturing
67	Flavoring syrup and concentrate manufacturing
68	Seasoning and dressing manufacturing
69	All other food manufacturing
70	Soft drink and ice manufacturing
71	Breweries
72	Wineries
73	Distilleries
74	Tobacco product manufacturing
126	Other basic organic chemical manufacturing
130	Fertilizer manufacturing
131	Pesticide and other agricultural chemical manufacturing
203	Farm machinery and equipment manufacturing

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<sup>i</sup> IMPLAN Professional is a proprietary input-output modeling software program developed by the Minnesota IMPLAN Group, Inc.

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