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***THE FOLLOWING FOR CONTRIBUTIONS TO THIS STUDY***

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As principal investigator, Dr. Charles Lamphear takes full responsibility for the study's methodology, data and findings.

## **Nebraska's Agribusiness Activity and Its Statewide Economic Importance**

The Nebraska Policy Institute (NPI) in October 2005 released a report, *Economic Importance of Irrigated Agriculture, 2003*, examining the economic importance of irrigation to Nebraska's economy. The release was the first part of a two-pronged study envisioned by NPI. The second part examines the contribution of the agribusiness sector to Nebraska's economy. The last study of the economic importance of agribusiness was performed in 1990. This report, *The Importance of Agriculture and Agribusiness to Nebraska's Economy, 2002*, consists of the second part of the study and summarizes the findings of the contribution of Nebraska agribusiness activity to the state's economy.

The methodology the study employs is relatively straightforward. Data from the IMPLAN model was used to calculate the direct economic contribution of agribusinesses in 2002, in terms of value of output, value added, employment and earned income. This represents the direct impact of agribusiness activities to the state's economy. Agribusinesses, though, do not operate in a vacuum. They do business with other businesses, purchase inputs and pay salaries and so forth which in turn multiplies throughout Nebraska's economy. These multiplier effects were estimated using an input/output model. The results presented in this report provide a picture of the total economic contribution of agribusinesses to Nebraska's economy.

Given the dynamic nature of Nebraska's economy and the changes and diversification which have occurred since 1990, one might expect the overall contribution of agribusiness to the state's economy to have declined. This study finds the opposite has occurred. In 1990, 25 percent of the state's total employment was directly or indirectly the result of agribusiness activity. In 2002, agribusiness supported nearly 366,000 full and part-time jobs, representing 31 percent of the state's total employment. No doubt, agriculture and agribusiness remains firmly entrenched as Nebraska's number one industry.

### **Direct Economic Contribution**

Agribusiness is considered an industrial complex, made up of a group of industries engaged in product-related production, exchange and marketing. The farm industry is the foundation of the agribusiness industrial complex, with backward linkages to farm suppliers and forward linkages to agricultural processors. In 2002, agribusiness in Nebraska produced nearly \$25.3 billion in goods and services, employed 120,000 workers, earned \$3 billion in wages and salaries and proprietor's income, and contributed \$5.6 billion to the state's value added of \$63.6 billion, for an 8.8 percent share (Table 1). The 120,000 jobs

represented slightly over 10 percent of the state's total employment for 2002. These results are from a recent study of the economic importance of the agribusiness complex to the state's overall economy.

For the study, agribusiness included the state's primary agricultural sector plus closely related supply and processing industries that depend on agricultural activity in Nebraska. The primary agricultural sector, referred to as Production Agriculture in Table 1, includes ranches, feedlots, dairies and other cattle farms; pig, poultry, equine, and other livestock operations; farms with food, fiber, seed and feed crops; fruits, nuts, and vegetable production; and greenhouse and nursery operations. Backward-linked to production agriculture is the agricultural service industry which includes agricultural chemical manufacturers, farm machinery manufacturers, agricultural service agents (e.g., aerial dusting and spraying services), and agricultural machinery, chemicals, and fertilizers services. Forward-linked from production agriculture are the agricultural processing industries — meat, grain, food processing and ethanol. The remaining fifteen industry categories presented in Table 1 represent the dependent industries. The full list of 16 industry categories presented in Table 1 represents Nebraska's agribusiness complex.

Any selection of agribusiness industries is arbitrary because there is no clear definition of what constitutes an agribusiness. Excluded from the selection are restaurants and grocery stores, since their activity is generally considered to be independent of the state's agricultural output.

**Table 1: Direct Economic Activity of Agribusinesses Operating in Nebraska: 2002**

Industry	Value of Output (\$millions)	Value Added (\$millions)	Employment	Earned Income (\$millions)
Production Agriculture	\$10,432.4	\$2,702.3	66,707	\$913.5
Agriculture Services	\$178.4	\$112.1	7,982	\$141.6
Meat Products	\$9,638.7	\$1,459.7	28,896	\$1,160.6
Grain Mill Products	\$1,085.2	\$187.0	1,410	\$109.4
Wet Corn Milling	\$417.7	\$87.1	478	\$35.3
Sugar and Confectionery Products	\$175.8	\$34.3	452	\$20.9
Canned, Frozen and Preserved Foods	\$398.5	\$124.1	1,399	\$55.5
Dairy Products	\$478.4	\$69.2	956	\$46.1
Bakery Products	\$296.2	\$173.3	1,921	\$98.3
Misc. Food Products	\$678.4	\$179.4	2,248	\$103.7
Leather and Leather Products	\$28.4	\$6.4	169	\$4.4
Nitrogenous and Phosphatic Fertilizers	\$45.7	\$7.6	107	\$6.1
Fertilizers, mixing only	\$37.4	\$7.5	115	\$4.1
Agricultural Chemicals	\$60.8	\$29.7	172	\$12.0
Farm Machinery and Equipment Manufacturing	\$1,226.3	\$396.5	5,080	\$238.5
Veterinary Services	\$113.5	\$46.0	2,061	\$45.0
<b>Total</b>	<b>\$25,291.8</b>	<b>\$5,622.2</b>	<b>120,153</b>	<b>\$2,995.0</b>

Source: Minnesota IMPLAN Group, Inc., 3<sup>rd</sup> Edition, February, 2004. Industry categories reflect titles used by the Minnesota IMPLAN Group, Inc. in their data reports. The data represent 2002, which is the latest data available from the Minnesota IMPLAN Group, Inc.

### **Total Economic Contribution**

Table 1 presents the direct economic contribution of agribusiness activity to the state's economy. However, the total economic effect is much greater. In 2002, agribusiness directly and indirectly contributed 37 percent to the state's total gross output, 28 percent to value added, 31 percent to total employment, and 33 percent to earned income. That level of economic contribution to the state's overall economy far exceeded that of any other industry complex doing business in Nebraska in 2002.

The above percentages on the relative importance of agribusiness to the state's economy summarize the results of an economic impact analysis of the agribusiness complex on the state's economy for 2002. The year 2002 was chosen, because it reflects the latest year for which complete data were available to conduct an economic impact analysis.

The total economic importance or impact of the agribusiness complex and its business interrelationships with other industries in the state was estimated using a state input-output (I/O) model. The I/O model was developed from the IMPLANPRI™ (IMPLAN) software and associated data bases. MIG, Inc. (Stillwater, MN) compiles economic data bases for U.S. counties and states using the North American Industry Classification System (NAICS). Data sources include the U.S. Department of Commerce, the U.S. Bureau of Labor Statistics and other federal and state agencies.

The results of the impact analysis are presented in Tables 2 through 4 by economic sector for gross output, value added and employment. Basically, gross output is the same as business sales. Value added is gross output minus intermediate inputs (goods and services needed for business operations). Employment includes both full and part-time workers.

For 2002, the agribusiness complex's total economic impact on Nebraska was an estimated \$45.9 billion in gross output, which represented about 37 percent of the state's total gross output for that year (Table 2). The two largest contributors to the state's total gross output were Production Agriculture and Agriculture Processing. Agribusiness directly and indirectly contributed \$17.8 billion to the state's total value added, or 28 percent (Table 3). By sector, the two largest contributors (or, beneficiaries) were Services and Education and Wholesale and Retail Trade. (Services include personal and business services, and Education includes both public and private education.) Directly and indirectly, agribusiness supported nearly 366,000 full and part-time jobs, representing 31 percent of the state's total employment for 2002 (Table 4). (A 1990 Nebraska study of the economic importance of agribusiness showed that 25 percent of Nebraska's total employment was directly and indirectly a result of agribusiness activity.) For this latest study, the largest contributor to employment was the Services and Education sector (Table 4). Total earned income associated with the direct and indirect impact of the agribusiness complex on the state's economy totaled \$14 billion, which was 33 percent of Nebraska's total earned income for 2002. (Earned income is wages and salaries plus proprietor's income.)

Since Production Agriculture, as defined earlier, is the economic foundation for the state's agribusiness complex, it can be said that the levels of economic activity presented in Tables 2 through 4 resulted from the output of Production Agriculture. Since Production Agriculture and its dependent agribusinesses directly and indirectly generate a very large share of Nebraska's overall economic activity, it is not an exaggeration to conclude that Production Agriculture is the dominant primary source for economic livelihood in Nebraska.

**Table 2: Total Output Impact of Agribusiness Activity  
By Industry: 2002**

Production Agriculture	\$10,314,759,539
Agriculture Processing	\$13,639,971,549
Other Manufacturing	\$1,709,313,342
Wholesale and Retail Trade	\$4,284,864,097
Transportation and Communications	\$2,353,901,566
Utilities	\$1,110,936,448
F.I.R.E., Leasing and Rentals	\$4,587,557,018
Services and Education	\$7,519,910,967
Other	\$342,480,644
Total Gross Impact	\$45,863,695,170

Source: Nebraska Input-Output Model results and Minnesota IMPLAN Group, Inc., 3<sup>rd</sup> Edition, February, 2004

**Table 3: Total Value Added Impact of Agribusiness Activity  
By Industry: 2002**

Production Agriculture	\$2,598,998,254
Agriculture Processing	\$2,465,551,759
Other Manufacturing	\$505,258,132
Wholesale and Retail Trade	\$3,144,113,663
Transportation and Communications	\$1,240,825,571
Utilities	\$820,461,343
F.I.R.E., Leasing and Rentals	\$2,498,433,357
Services and Education	\$4,392,735,379
Other	\$145,996,432
Total Value Added	\$17,812,373,890

Source: Nebraska Input-Output Model results and Minnesota IMPLAN Group, Inc., 3<sup>rd</sup> Edition, February, 2004

**Table 4: Total Employment Impact of Agribusiness Activity  
By Industry: 2002**

Production Agriculture	63,990
Agriculture Processing	39,778
Other Manufacturing	6,867
Wholesale and Retail Trade	62,035
Transportation and Communications	16,366
Utilities	1,392
F.I.R.E., Leasing and Rentals	32,709
Services and Education	139,639
Other	3,084
Total Employment Impact	365,861

Source: Nebraska Input-Output Model results and Minnesota IMPLAN Group, Inc., 3<sup>rd</sup> Edition, February, 2004