

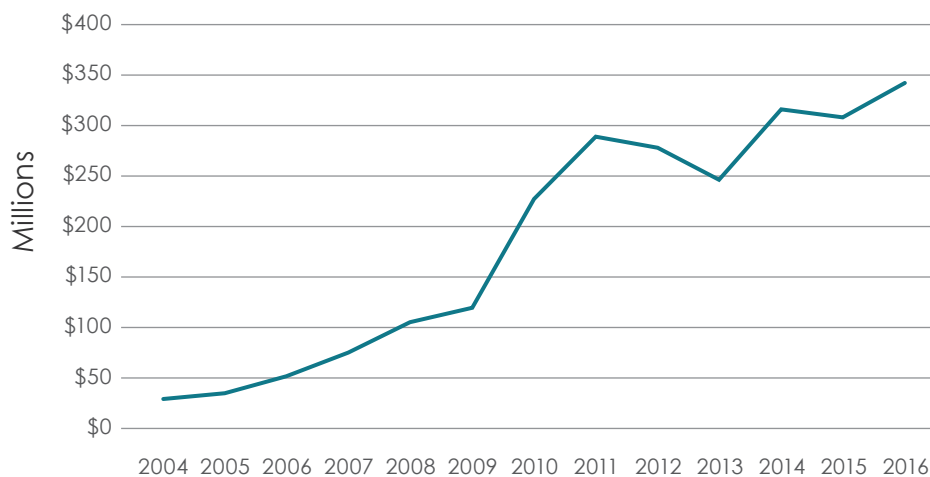
BACKGROUND

In 2012, the United States entered into a free trade agreement with South Korea immediately removing tariffs on two-thirds of U.S. farm and food exports to that country. Since then, U.S. agricultural exports to South Korea have grown. According to the United States Department of Agriculture (USDA) Foreign Agricultural Service, U.S. average agricultural exports to South Korea have increased from \$5.4 billion in the three-year period before KORUS implementation (2009-11) to \$6.37 billion in the three years following (2014-16). South Korea was U.S. agriculture's sixth largest market for agricultural goods in 2016, and the U.S. was South Korea's top agricultural supplier, providing 28 percent of the country's farm imports.

South Korea is the second-largest importer of U.S. beef and beef products, importing 17 percent of total U.S. beef exports in 2016. It is also the second-largest importer of U.S. hides and skins, the third-largest importer of corn, and fifth-largest importer of pork and pork products. South Korea is also a growing importer of distillers dried grains, buying \$176 million of U.S. product in 2016, up 95 percent compared to 2011.

South Korea was Nebraska agriculture's fifth-largest customer in 2016, behind only Mexico, Canada, Japan, and China. In that year, South Korea imported \$340 million worth of Nebraska agricultural goods, up from \$288 million in 2011. Nebraska agricultural exports to South Korea in the years immediately following implementation of KORUS fell due to a sluggish Korean economy and complicating factors in the Korean beef market. However, Nebraska exports found their footing in 2014, and have increased each year since (*Figure 1.*). Nebraska average agricultural exports to South Korea increased from \$210 million in the three-year period before KORUS implementation (2009-11) to \$321 million in the three years following (2014-16), an increase of 52 percent. Beef and beef products and pork and pork products are Nebraska's two largest agricultural exports to South Korea (*Table 1.*).

FIGURE 1. NEBRASKA AGRICULTURAL EXPORTS TO SOUTH KOREA



Source: U.S. Census Bureau Trade Data, U.S. State Export Data

TABLE 1. NEBRASKA EXPORT VALUE TO SOUTH KOREA, 2016

Beef	221.5	Millions
Pork	39.2	
Dried Distillers Grain	1.6	
Corn	.722	
Total Ag	339.7	

Source: U.S. Census Bureau Trade Data, U.S. State Export Data

President Trump last year announced his intent to enter negotiations with South Korea to modernize KORUS. Presumably, the Trump Administration is concerned with the overall trade deficit the U.S. has with South Korea, estimated to be \$27.7 billion in 2016. However, the U.S. has a trade surplus with South Korea in agricultural trade, estimated to exceed \$6.5 billion in 2017. Any changes to KORUS governing the rules of agricultural trade between the two countries could disrupt the flow of U.S. agricultural exports to South Korea. For Nebraska, such changes would be felt most acutely by beef and pork producers.

One way to measure the value of Nebraska exports to South Korea is to reflect export value on a per-unit basis. A per-unit basis expresses the value of commodity exports in terms similar to prices received by farmers and ranchers. *Table 2.* shows the estimated per-unit values of Nebraska exports to South Korea for beef and pork. The per-unit values were calculated by dividing export values for each commodity by their respective livestock numbers in the state. The resulting figures provide a reasonable reflection of the value of exports to South Korea for beef and pork producers in Nebraska. Clearly, the figures in *Table 2.* demonstrate that South Korean exports of these commodities are key contributors to the value received by producers of these commodities. For comparison, a separate analysis of the per-unit value of exports to Mexico and Canada estimated a per-unit value of \$38.22/head for beef and \$22.16/head for pork. So, the value of exports to South Korea to Nebraska beef and pork producers is comparable to that of NAFTA.

TABLE 2. PER-UNIT VALUE OF NEBRASKA EXPORTS TO SOUTH KOREA, 2016*

Beef	\$34.35/hd.
Pork	\$11.52/hd.

*Estimates based on U.S. Census Bureau Trade Data, U.S. State Export Data, and USDA National Agricultural Statistics Service data.

VALUE OF EXPORTS TO SOUTH KOREA TO NEBRASKA COUNTIES

Data on the value of Nebraska agricultural exports to South Korea exist, but data on the value of exports to Nebraska counties does not. Counties do not share equally in the benefits created by agricultural exports. Each Nebraska county is unique and commodities are not produced uniformly across counties. Thus, the importance of South Korean export markets for counties and the sensitivity of a county's agriculture to these markets will vary.

To shed light on the relative magnitude of agriculture exports to South Korea to Nebraska counties, commodity export values were allocated to counties based on each county's share of total state

production. Commodity export values for each commodity were then summed to estimate the total value of exports to South Korea. Commodities included in the analysis are corn, beef, pork, and distillers grains. Soybeans, soybean meal, wheat, and other commodities were not included due to a lack of Nebraska specific data on exports to South Korea. The estimated export values provide farmers and ranchers, industry stakeholders, and policymakers an idea of the prominence of exports to South Korea from a county.

This analysis also estimated a per-farm value in each county for exports to South Korea. The per-farm value is calculated by dividing the estimated total South Korean export value calculated for each county by the number of farms in the county reported in the 2012 USDA Census of Agriculture. The resulting county figures provide another way to demonstrate the relative importance of exports to South Korea.

Both estimates should be “taken with a grain of salt” and are not meant to denote exact dollar figures for county exports. Tracing the value of commodity exports back to a county is fraught with difficulty. For example, a commodity could be produced in one county, sold to an elevator in another county, and processed in a third county, dispersing the value of the exports across all three counties. Rather, the estimates are meant to provide an approximation of the significance of South Korean exports by commodity to a county. The appendix provides a further discussion of the approach used and difficulties of tracing export value to counties for those readers interested. Finally, not all counties have estimates for each commodity because data was lacking for some counties.

Table 3. lists the estimated total value of exports to South Korea for each county in descending order along with the estimated per farm export value. *Figure 2.* plots the county total export values on a map while *Figure 3.* plots the per-farm values. Cuming county, because of its strong livestock sector, is the most reliant of Nebraska counties on agricultural trade with South Korea in terms of total export value. Exports to South Korea were estimated to be worth roughly \$12.5 million to the county. This equates to almost \$13,640 per-farm. Other counties near the top include Custer and Holt counties with export values exceeding \$10 million, and Platte, Lincoln, and Dawson counties with export values to South Korea at just under \$10 million. At the other end of the spectrum, Sarpy and Douglas counties are the least reliant on trade with South Korea partners with export values at less than \$200,000.

The importance of trade with South Korea for Nebraska counties looks different when measuring on a per-farm basis. On this scale, Wheeler county scores as the most reliant on trade with South Korea with an export value per-farm just short of \$20,000. Other counties more reliant on trade with South Korea on a per-farm basis are Cherry, Phelps, Cuming, and Grant counties. Exports to South Korea in Douglas, Sarpy, and Lancaster counties are the least important to farmers and ranchers on a per-farm basis. A cluster of counties in the sandhills stand out in *Figure 3.* as counties reliant on trade with South Korea from a per-farm perspective. This is due to the significant level of beef and beef product exports to the country from Nebraska. *Table 4.* details the estimated export value for each commodity across the counties. One can see that counties in Nebraska which are typically thought of as “beef” counties stand out for their reliance on trade with South Korea.

TABLE 3. ESTIMATED TOTAL KORUS EXPORT VALUE AND PER FARM EXPORT VALUE

County	Korea Export Value (\$)	Korea \$ per farm	County	Korea Export Value (\$)	Korea \$ per farm	County	Korea Export Value (\$)	Korea \$ per farm
Cuming	\$12,521,811	\$13,640	Box Butte	\$2,522,368	\$5,413	Nuckolls	\$1,544,829	\$3,551
Custer	\$12,447,698	\$9,207	Seward	\$2,519,139	\$2,539	Garfield	\$1,531,217	\$6,775
Holt	\$11,500,937	\$8,992	Hall	\$2,475,158	\$4,174	Blaine	\$1,511,892	\$12,922
Platte	\$9,951,256	\$10,564	Polk	\$2,401,574	\$5,154	Wayne	\$1,494,537	\$2,885
Lincoln	\$9,323,090	\$7,982	Dawes	\$2,335,542	\$4,737	Washington	\$1,424,577	\$1,735
Dawson	\$9,314,083	\$11,556	Adams	\$2,321,785	\$4,095	Burt	\$1,308,519	\$2,337
Cherry	\$9,108,202	\$16,092	Dundy	\$2,317,032	\$9,231	Thayer	\$1,278,475	\$2,959
Boone	\$6,731,535	\$10,420	Merrick	\$2,291,403	\$4,657	Otoe	\$1,277,271	\$1,424
Antelope	\$6,545,343	\$8,534	Stanton	\$2,280,287	\$3,684	McPherson	\$1,254,591	\$10,632
Phelps	\$5,890,762	\$14,545	Dodge	\$2,255,803	\$2,941	Furnas	\$1,227,398	\$3,155
Colfax	\$5,460,779	\$9,857	York	\$2,229,846	\$4,122	Pawnee	\$1,215,489	\$2,251
Cedar	\$5,443,062	\$5,797	Red Willow	\$2,221,878	\$5,486	Perkins	\$1,210,647	\$3,073
Morrill	\$5,340,351	\$10,430	Keya Paha	\$2,202,361	\$9,026	Grant	\$1,064,732	\$13,309
Knox	\$4,326,898	\$4,006	Garden	\$2,163,811	\$8,290	Loup	\$1,028,635	\$7,454
Brown	\$4,305,922	\$13,128	Gage	\$2,106,532	\$1,668	Logan	\$1,002,524	\$6,728
Wheeler	\$3,949,813	\$19,949	Greeley	\$2,079,320	\$5,345	Gosper	\$968,427	\$3,725
Clay	\$3,872,920	\$8,475	Frontier	\$2,058,062	\$6,492	Lancaster	\$960,679	\$523
Scotts Bluff	\$3,796,536	\$3,930	Cheyenne	\$2,026,522	\$3,651	Hitchcock	\$936,775	\$3,133
Buffalo	\$3,717,470	\$3,554	Butler	\$1,994,365	\$2,374	Saline	\$927,596	\$1,227
Sheridan	\$3,614,951	\$6,744	Keith	\$1,947,956	\$5,021	Thomas	\$910,174	\$10,462
Madison	\$3,496,813	\$4,644	Hayes	\$1,906,042	\$8,111	Arthur	\$893,001	\$10,506
Chase	\$3,471,832	\$10,152	Banner	\$1,891,099	\$9,798	Franklin	\$841,143	\$2,489
Sioux	\$3,262,889	\$9,217	Pierce	\$1,822,949	\$2,693	Hooker	\$739,162	\$9,014
Rock	\$3,165,013	\$12,814	Fillmore	\$1,807,279	\$3,829	Kimball	\$663,128	\$1,650
Howard	\$2,879,495	\$4,222	Thurston	\$1,766,053	\$4,812	Deuel	\$625,771	\$2,640
Kearney	\$2,862,005	\$8,320	Richardson	\$1,671,250	\$2,271	Johnson	\$577,052	\$983
Jefferson	\$2,676,962	\$4,269	Hamilton	\$1,644,063	\$2,874	Nemaha	\$545,994	\$1,211
Valley	\$2,663,657	\$6,626	Dixon	\$1,643,673	\$2,884	Cass	\$442,713	\$606
Nance	\$2,643,738	\$7,447	Boyd	\$1,620,211	\$6,091	Dakota	\$273,279	\$1,125
Webster	\$2,630,412	\$6,218	Sherman	\$1,583,180	\$3,824	Sarpy	\$145,471	\$367
Saunders	\$2,534,984	\$2,105	Harlan	\$1,553,671	\$4,316	Douglas	\$92,816	\$234

**Estimates based on U.S. Census Bureau Trade Data, U.S. State Export Data, and 2012 USDA Census of Agriculture.*

FIGURE 2. VALUE OF EXPORTS TO SOUTH KOREA BY COUNTY, 2016

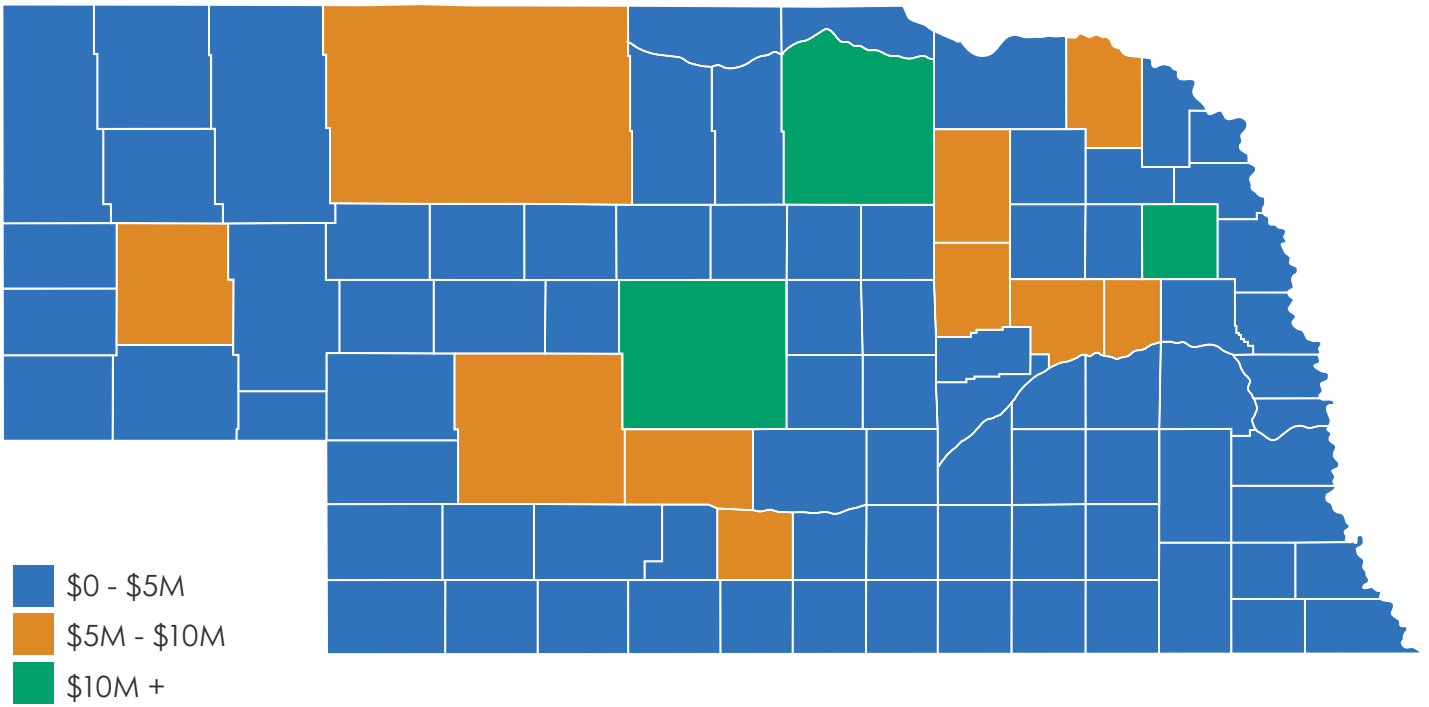


FIGURE 3. VALUE OF EXPORTS TO SOUTH KOREA PER-FARM, 2016

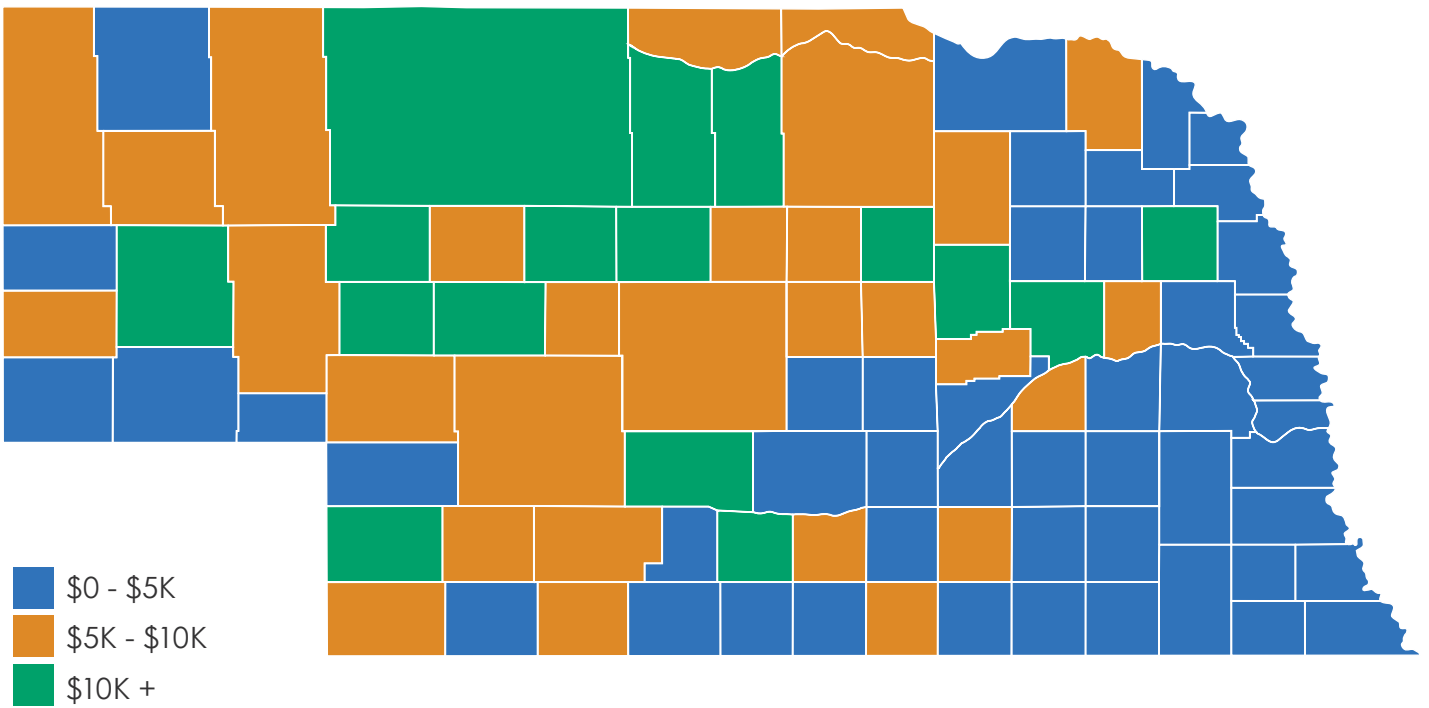


TABLE 4. ESTIMATED EXPORT VALUE BY COMMODITY TO SOUTH KOREA

County	Corn Export Value (\$)	Beef Export Value (\$)	Pork Export Value (\$)
Adams	\$48,165	\$2,060,772	\$212,847
Antelope	\$56,449	\$3,949,813	\$2,539,081
Arthur	\$0	\$893,001	\$0
Banner	\$2,058	\$1,889,041	\$0
Blaine	\$659	\$1,511,233	\$0
Boone	\$48,370	\$3,365,928	\$3,317,238
Box Butte	\$14,185	\$2,507,273	\$910
Boyd	\$0	\$1,614,271	\$5,939
Brown	\$12,646	\$4,293,275	\$0
Buffalo	\$55,417	\$3,606,351	\$55,702
Burt	\$31,280	\$875,828	\$401,412
Butler	\$38,353	\$1,184,944	\$771,069
Cass	\$32,184	\$340,027	\$70,502
Cedar	\$46,994	\$4,293,275	\$1,102,792
Chase	\$37,212	\$3,434,620	\$0
Cherry	\$6,458W	\$9,101,743	\$0
Cheyenne	\$0	\$2,026,426	\$96
Clay	\$41,543	\$1,786,002	\$2,045,375
Colfax	\$27,885	\$2,988,120	\$2,444,775
Cuming	\$42,109	\$10,303,860	\$2,175,842
Custer	\$58,066	\$10,132,129	\$2,257,503
Dakota	\$15,682	\$257,597	\$0
Dawes	\$0	\$2,335,542	\$0
Dawson	\$57,145	\$8,243,088	\$1,013,851
Deuel	\$0	\$625,101	\$671
Dixon	\$29,401	\$1,614,271	\$0
Dodge	\$35,872	\$1,442,540	\$777,391
Douglas	\$6,951	\$85,866	\$0
Dundy	\$15,837	\$2,301,196	\$0
Fillmore	\$52,826	\$1,081,905	\$672,548
Franklin	\$24,524	\$807,136	\$9,483
Frontier	\$22,637	\$1,992,080	\$43,345
Furnas	\$25,281	\$1,202,117	\$0
Gage	\$35,661	\$1,219,290	\$851,581
Garden	\$0	\$2,163,811	\$0
Garfield	\$2,811	\$1,528,406	\$0

County	Corn Export Value (\$)	Beef Export Value (\$)	Pork Export Value (\$)
Gosper	\$23,906	\$944,521	\$0
Grant	\$0	\$1,064,732	\$0
Greeley	\$18,548	\$2,060,772	\$0
Hall	\$46,981	\$2,369,888	\$58,289
Hamilton	\$59,874	\$1,425,367	\$158,821
Harlan	\$25,265	\$1,528,406	\$0
Hayes	\$17,001	\$1,889,041	\$0
Hitchcock	\$9,427	\$927,347	\$0
Holt	\$47,709	\$7,899,626	\$3,553,602
Hooker	\$0	\$738,443	\$718
Howard	\$25,897	\$2,782,042	\$71,556
Jefferson	\$25,082	\$996,040	\$1,655,841
Johnson	\$11,895	\$477,412	\$87,744
Kearney	\$45,617	\$2,816,389	\$0
Keith	\$24,568	\$1,923,387	\$0
Keya Paha	\$4,204	\$2,198,157	\$0
Kimball	\$3,393	\$659,447	\$287
Knox	\$33,623	\$4,293,275	\$0
Lancaster	\$31,154	\$755,616	\$173,908
Lincoln	\$47,748	\$9,273,474	\$1,868
Logan	\$6,485	\$996,040	\$0
Loup	\$0	\$1,013,213	\$15,422
Madison	\$37,851	\$3,194,197	\$264,766
McPherson	\$954	\$1,253,636	\$0
Merrick	\$28,468	\$1,562,752	\$700,183
Morrill	\$16,690	\$5,323,661	\$0
Nance	\$20,286	\$978,867	\$1,644,586
Nemaha	\$18,011	\$336,593	\$191,390
Nuckolls	\$28,763	\$1,322,329	\$193,737
Otoe	\$30,672	\$480,847	\$765,752
Pawnee	\$14,112	\$1,064,732	\$136,646
Perkins	\$42,876	\$1,167,771	\$0
Phelps	\$51,908	\$5,838,854	\$0
Pierce	\$36,946	\$1,786,002	\$0
Platte	\$56,057	\$4,465,006	\$5,430,193
Polk	\$31,686	\$2,369,888	\$0

County	Corn Export Value (\$)	Beef Export Value (\$)	Pork Export Value (\$)
Red Willow	\$23,721	\$2,198,157	\$0
Richardson	\$25,418	\$1,116,252	\$529,580
Rock	\$5,162	\$3,159,851	\$0
Saline	\$34,595	\$893,001	\$0
Sarpy	\$7,847	\$137,385	\$239
Saunders	\$46,262	\$2,404,234	\$84,488
Scotts Bluff	\$18,454	\$3,778,082	\$0
Seward	\$37,258	\$1,665,791	\$816,090
Sheridan	\$8,456	\$3,606,351	\$144
Sherman	\$20,428	\$1,562,752	\$0
Sioux	\$0	\$3,262,889	\$0

County	Corn Export Value (\$)	Beef Export Value (\$)	Pork Export Value (\$)
Stanton	\$25,452	\$1,682,964	\$571,871
Thayer	\$39,659	\$1,116,252	\$122,564
Thomas	\$0	\$910,174	\$0
Thurston	\$25,364	\$1,597,098	\$143,591
Valley	\$18,999	\$2,644,658	\$0
Washington	\$22,842	\$978,867	\$422,869
Wayne	\$34,823	\$1,459,714	\$0
Webster	\$20,101	\$2,610,311	\$0
Wheeler	\$0	\$3,949,813	\$0
York	\$61,791	\$1,562,752	\$605,303

**Estimates based on U.S. Census Bureau Trade Data, U.S. State Export Data, and 2012 USDA Census of Agriculture.*

***Corn includes value of distillers dried grains in per unit value estimates.*

CONCLUSION

President Trump last year announced his intent to enter into negotiations with South Korea to modernize KORUS. Any changes to KORUS could disrupt the flow of U.S. agricultural exports to South Korea. For Nebraska, any changes to rules governing agricultural trade would predominantly affect cattle and pork producers. Because South Korea is Nebraska agriculture's fifth-largest customer, Nebraska has a stake in the future of KORUS.

This analysis examined various means to measure the relative value of exports to South Korea to Nebraska farmers and ranchers and Nebraska counties. Per-unit values, the total dollar value by county, and per-farm values of exports to South Korea were estimated to describe the reliance of different areas of the state to trade with the country. The analysis identifies which Nebraska counties potentially have the most at risk if trade with South Korea were disrupted. It is hoped this analysis will help Farm Bureau members, industry stakeholders, and policymakers better understand how much Nebraska agriculture relies on export markets in South Korea.

APPENDIX: DESCRIPTION OF ANALYSIS

The production-based approach used in the analysis is patterned after the approach formerly used by the USDA Economic Research Service to allocate export value to states. Each county's production share of total state production for a commodity was calculated and multiplied by the commodity's total export value for the state. In this way, each county's export value for a commodity can be estimated. USDA Economic Research Service now uses a cash receipts-based methodology for allocating export value. This analysis uses the production-based methodology instead to take advantage of the most recent data available. Commodity cash receipts are only reported at the county level in the Census of Agriculture conducted every five years and the last census was performed in 2012.

The approach can provide reasonable estimates of the relative importance of exports to the counties, but it does have shortcomings. For example, the value of beef and pork exports includes other costs like processing, transportation, margins, etc. These costs are reflected in the export value attributable to a state, and will consequently be reflected in the county value estimates. In addition, the value of beef and pork exports adds value for producers of corn and soybeans, and this value is not reflected in county level values of these commodities. A commodity produced in one county can be sold in another county, and processed in a third county, further dispersing the value of the exports sold. However, even with these shortcomings, the figures can provide a reasonable approximation of the magnitude or importance of various commodity exports to South Korea.

County and state-level production data for 2016 for corn, soybeans, wheat, sorghum, and dry beans comes from USDA-National Agricultural Statistics Service (NASS). Cattle numbers for 2016, including both cows and calves, also comes from USDA-NASS. County level data for hog numbers was not available, so a receipts-based approach was used using data from 2012 USDA Census of Agriculture. Production data was not available for all counties due to the insufficiency of the data. Thus, some counties may not have estimates for a specific commodity. Nebraska 2016 export data to South Korea comes from the U.S. Census Bureau.

The analysis also sought to account for the export of products and byproducts which could be traced to a specific commodity, such as ethanol and distillers dried grains. The export value for these processed goods was apportioned to counties based on counties' production share. To estimate the value of exports of beef and veal for each county, the share of each county's cattle inventory of the state's total inventory was calculated. The estimated share serves as a reasonable proxy of the importance of beef cattle in the county. Each county's share was then multiplied by the beef and veal export value for the state to estimate the value of beef exports to the county. Using this approach, estimated export value encompasses transportation costs, slaughtering-fabricating costs, and other transaction costs embedded in the price of the final product in the export market. Also, using total cattle inventory blends both the cow/calf and feeding sectors of the industry in the figures. However, given the goal of the analysis is to estimate the relative importance of KORUS exports to Nebraska counties, it was felt the approach taken was reasonable.



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