

# The Economic Impact of a Commercial Cattle Operation in a Rural Nebraska County

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The purpose of this analysis is to estimate the economic and fiscal impact of a hypothetical 15,000-head capacity commercial cattle operation in a typical Nebraska rural county with a diversified cattle sector. This information can be used by local government officials and economic developers to inform public policy decisions and to identify new areas of business opportunity. This analysis estimates the economic impact of cattle operations, local ownership and government fiscal impacts at the county level.

Custer County, located in central Nebraska, is selected as a typical rural county with a diversified cattle sector. In 2002 Custer County sold 305,936 head of cattle, making it the fourth largest county in Nebraska in terms of cattle sold. Although most cattle sold in the county were over 500 pounds in weight (97.3 percent), Custer County had a diversified cattle sector compared to other Nebraska counties. Custer County ranked 42nd in the state on the percentage of cattle sold over 500 pounds (placing it in the 55th percentile statewide) and ranked 52nd on the percentage of cattle sold under 500 pounds (placing it in the 44th percentile statewide). Further, while Custer County did have a number of feedlots, they did not dominate the cattle sector. The county ranked 35th in the state on the percentage of cattle over 500 pounds on feed at large operations (placing it in the 59th percentile statewide).

However, care should be taken when transferring the results of this analysis to other Nebraska counties. Custer County has a diversified cattle sector so the results

## Key Findings

- A 15,000-head commercial cattle operation creates 25 new jobs and \$13.74 million in added value.
- Cattle operation purchases from local businesses create an additional 48 new jobs and \$5.98 million in added value.
- Spending by new workers adds another 20 jobs and \$871,000 in added value.
- Including both direct and spin-off effects, the cattle operation creates 93 new jobs and \$20.59 million in value added to the local economy.
- The employment multiplier is 3.72, where every job creates 2.72 additional jobs in the county, although many are part-time.
- The value added multiplier is 1.50, where every dollar creates an additional \$0.50 elsewhere in the county.
- Cattle operations generate \$1.80 million in state tax revenues and \$1.37 million in local tax revenues.
- Local ownership increases the economic and fiscal impacts in the county economy.
- Potential increased demand for government services needs to be considered.
- Potential environmental remediation costs also need to be considered.



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may differ in counties dominated by either cow-calf or feeding operations. Custer County also is a larger rural county (population of 11,200 in 2006) that is adjacent to the Lexington and North Platte micropolitan areas, so the results for other counties may differ depending on whether they are adjacent to larger population centers or are more isolated. Those wishing a customized analysis for a particular county should contact the author or their local Extension Educator.

## Methods

Economic and fiscal impacts are estimated using an input-output or social accounting model. This model estimates the flow of dollars within a local economy between businesses, households, government and the rest of the world. In short, it is a way to understand how a local economy works and how economic events make their way through the system. Input-output analysis attempts to model all market transactions within the local economy as a firm produces a certain commodity. Supply-chain or backward linkages estimate the goods and services required by the firm to produce a certain commodity. These supply-chain purchases can be provided by local businesses or imported from outside the local economy. Customer-chain or forward linkages estimate where the commodities produced by the firm are sold. A firm may sell its commodities to other industries, to households, or export them from the local economy. Transfer linkages estimate the payments made between industries, households and governments in the course of commodity production and include payments of wages, dividends, profits, taxes, pensions and government transfers.

In this analysis, economic impacts are measured in terms of employment and value added. Employment includes both full-time and part-time jobs, which are by place of work. Value added is a measure of economic activity that includes wages, property income, profits and taxes. The impacts in this analysis should only be used at the county level and should not be used additively to estimate state level impacts. Economic and fiscal impacts are estimated using an input-output model developed by IMPLAN. It is assumed that a 15,000-head operation will market 30,000 head annually, for a turnover rate of two.

Revenues and production costs of commercial cattle operations in Nebraska are taken from the Agricultural Resource Management Survey (ARMS) produced by the U.S. Department of Agriculture. Commercial farms as defined by USDA include large family farms with annual sales of \$250,000 to \$499,999, very large family farms with annual sales of \$500,000 or more, and all non-family farms operated by managers and owned by non-related individuals.

## Operations Impact — Non-Local Ownership

**Direct** economic impacts are caused by the operation of a 15,000-head capacity commercial cattle operation. It is estimated that a commercial cattle operation will generate \$37.36 million in total revenues annually, with \$30.75 million coming from livestock sales, \$3.37 million from livestock services, \$2.09 million from crop sales and \$1.15 million from government payments. Crop sales are likely due to sales of excess feed grown or purchased by commercial operations; government payments are likely paid to larger family farm operations included in this analysis.

This direct impact will add 25 new jobs and \$13.74 million in value-added economic activity to the county economy. This scenario assumes no local ownership. This direct impact creates a spin-off effect caused by the spending of the commercial cattle operation and its workers in the local economy (*Table 1*).

**Indirect**, or business-to-business impacts, are goods and services purchased by the commercial cattle operation from other businesses in the county. These transactions add 48 jobs and \$5.98 million in value to the local economy. Indirect effects would create business opportunities in the following industries:

### Business-to-Business Opportunities — Employment

- Veterinary services (7 jobs)
- Cattle ranching and farming (6 jobs)
- Agricultural support services (6 jobs)
- Banking and credit intermediaries (5 jobs)
- Grain farming (5 jobs)
- Commercial machinery maintenance (4 jobs)
- Non-residential building maintenance (4 jobs)
- Automotive maintenance and repair (2 jobs)

### Business-to-Business Opportunities — Value Added

- Cattle ranching and farming (\$3.5 million)
- Banking and credit intermediaries (\$674,870)
- Grain farming (\$425,170)
- Other crop farming (\$162,900)
- Commercial machinery maintenance (\$158,980)
- Agricultural support services (\$158,500)
- Non-residential building maintenance (\$154,330)
- Veterinary services (\$148,330)

**Induced**, or business-to-household impacts, are goods and services purchased by households that have one or more members employed at the commercial cattle operation or in the indirect support industries. These transactions add 20 jobs and \$871,000 in value to the county economy. Induced effects would create business opportunities in the following industries:

**Table 1. Economic impact of a commercial cattle operation with no local ownership in a rural Nebraska county.**

Industry	Employment Impacts <sup>1</sup>				Value Added Impacts Millions (2006\$)			
	Direct	Indirect	Induced	Total	Direct	Indirect	Induced	Total
Cattle Ranching and Farming	25	6	0	31	\$13.741	\$3.510	\$0.002	\$17.253
Other Agricultural Production	0	11	0	12	\$0.000	\$0.755	\$0.005	\$0.760
Mining	0	0	0	0	\$0.000	\$0.000	\$0.000	\$0.000
Utilities	0	0	0	0	\$0.000	\$0.000	\$0.000	\$0.000
Construction	0	4	0	4	\$0.000	\$0.157	\$0.004	\$0.161
Manufacturing	0	0	0	1	\$0.000	\$0.029	\$0.016	\$0.046
Wholesale Trade	0	1	1	2	\$0.000	\$0.077	\$0.052	\$0.128
Transportation and Warehousing	0	2	1	2	\$0.000	\$0.078	\$0.021	\$0.098
Retail Trade	0	1	6	7	\$0.000	\$0.020	\$0.132	\$0.152
Information	0	0	0	0	\$0.000	\$0.008	\$0.015	\$0.023
Finance and Insurance	0	6	1	6	\$0.000	\$0.727	\$0.065	\$0.792
Real Estate and Rental	0	0	0	1	\$0.000	\$0.020	\$0.007	\$0.027
Professional and Scientific Services	0	7	0	7	\$0.000	\$0.159	\$0.012	\$0.172
Management of Companies	0	0	0	0	\$0.000	\$0.000	\$0.000	\$0.000
Administrative and Waste Services	0	0	0	1	\$0.000	\$0.005	\$0.005	\$0.010
Educational Services	0	0	0	0	\$0.000	\$0.000	\$0.000	\$0.000
Health and Social Services	0	0	5	5	\$0.000	\$0.000	\$0.154	\$0.154
Arts, Entertainment, and Recreation	0	0	0	0	\$0.000	\$0.000	\$0.008	\$0.008
Accommodation and Food Services	0	0	3	3	\$0.000	\$0.004	\$0.035	\$0.039
Other Services	0	6	2	9	\$0.000	\$0.227	\$0.026	\$0.253
Government and Other	0	2	1	2	\$0.000	\$0.205	\$0.311	\$0.516
<b>TOTAL</b>	<b>25</b>	<b>48</b>	<b>20</b>	<b>93</b>	<b>\$13.741</b>	<b>\$5.982</b>	<b>\$0.871</b>	<b>\$20.59</b>

<sup>1</sup>Numbers may not sum due to rounding. Impacts generated using IMPLAN.

Analysis developed by the Department of Agricultural Economics, University of Nebraska–Lincoln.

### Household Spending Opportunities — Employment

- Food services and drinking places (2 jobs)
- Hospitals (2 jobs)
- Offices of physicians and dentists (1 job)
- Food and beverage stores (1 job)
- Nursing and residential care (1 job)
- Non-store retailers (1 job)
- Wholesale trade (1 job)
- Miscellaneous store retailers (1 job)

### Household Spending Opportunities — Value Added

- Owner-occupied real estate equity (\$258,030)
- Hospitals (\$61,840)
- Banking and credit intermediaries (\$56,890)
- Offices of physicians and dentists (\$55,490)
- Wholesale trade (\$51,740)
- Public electric utilities (\$36,040)
- Food and drink services (\$32,880)
- Motor vehicle parts and dealers (\$29,150)

The **total impact** of a commercial cattle operation, including both direct and spin-off effects, adds 93 new jobs and generates \$20.59 million in new value for the local economy. This is a sizable impact in the county, increasing total employment by 1.8 percent and total

value added by 6.9 percent. Taken together, businesses that benefit the most include:

### Largest Job Impacts — Total Effects

- Cattle ranching and farming (31 jobs)
- Veterinary services (7 jobs)
- Agricultural support services (6 jobs)
- Banking and credit intermediaries (6 jobs)
- Grain farming (5 jobs)
- Commercial machinery maintenance (4 jobs)
- Non-residential building maintenance (4 jobs)
- Food and drink services (4 jobs)

### Largest Value Added Impacts — Total Effects

- Cattle ranching and farming (\$17.3 million)
- Banking and credit intermediaries (\$731,760)
- Grain farming (\$428,320)
- Owner-occupied real estate equity (\$258,030)
- Other crop farming (\$163,310)
- Commercial machinery maintenance (\$160,080)
- Agricultural support services (\$159,090)
- Public electric utilities (\$157,800)

For an employment multiplier, one new job in a commercial cattle operation creates an additional 2.72 jobs elsewhere in the county economy, for a total job

multiplier of 3.72. For a value-added multiplier, one new dollar in a commercial cattle operation generates \$0.50 in value elsewhere in the local economy, for a total value added multiplier of 1.50. The jobs multiplier is much higher because it includes industries that employ many part-time workers, and many of these jobs pay low wages.

In terms of tax revenues, a 15,000-head commercial cattle operation generates \$3.17 million in state and local taxes. Operations generate \$1.80 million in **state tax revenues**, coming from state sales tax (\$1.15 million), corporate income and dividends tax (\$377,810), and other miscellaneous state taxes and charges (\$103,800). Operations also generate \$1.37 million in **local tax revenues**, coming from property tax (\$961,730), miscellaneous local taxes and charges (\$279,050), and local sales tax (\$128,180). Local tax revenues are shared among cities, K-12 schools, county government and other taxing jurisdictions. It is important to note that these are gross revenue estimates that do not count government costs. The costs of any government subsidies or tax incentives should be deducted from gross tax revenues. Further, the costs of expanded government services (such as utilities, roads and schools) also should be deducted from gross tax revenues.

## Operations Impacts — Local Ownership

### 25 Percent Local Ownership

This part of the analysis looks at the economic impact of a commercial cattle operation that has 25 percent local ownership. As in the previous analysis, it is estimated that a 15,000-head commercial cattle operation will generate \$37.36 million in total revenues annually and will employ 25 new workers. In addition, having 25 percent of the operation owned by local residents adds \$1.90 million in disposable income to the county. Compared to being owned by those outside the community, local ownership increases the total economic and fiscal impact of commercial cattle operations in the county.

The total impact of a 25 percent locally owned commercial cattle operation, including both direct and spin-off effects, adds 107 new jobs and generates \$21.18 million in new value for the local economy (*Table 2*). This is a sizable impact in the county, increasing total employment by 2.1 percent and total added value by 7.2 percent. In addition, 25 percent local ownership in the cattle operation generates \$1.84 million in state tax revenues and \$1.40 million in local tax revenues.

### 50 Percent Local Ownership

A commercial cattle operation with 50 percent local ownership adds \$3.81 million in disposable income to

## Economic Definitions

*Employment* is by place of work and includes both full- and part-time jobs.

*Value added* is a measure of economic activity that includes employee wages, property income, profits and taxes paid.

*Indirect* impacts represent business-to-business effects.

*Induced* impacts represent household spending effects.

*Multipliers* measure the total change in the economy due to a one unit change (usually in final demand) in a specific sector.

the county, generating an even larger economic and fiscal impact. In total the local economy would gain 120 new jobs and generate \$21.77 million in new value, increasing total employment by 2.3 percent and total added value by 7.4 percent (*Table 3*). In terms of tax revenues, a commercial cattle operation with 50 percent local ownership would generate \$1.88 million for the State of Nebraska and \$1.43 million for local governments.

## Summary

This analysis estimates the economic and fiscal impact of a 15,000-head capacity commercial cattle operation in a typical rural county in Nebraska with a diversified cattle sector. The direct operation of a commercial cattle operation creates 25 new jobs and generates \$13.74 million in new value-added economic activity in the county. This direct impact creates a spin-off effect caused by the spending of the commercial cattle operation and its workers in the local economy. Goods and services purchased by the commercial cattle operation from other businesses in the county add an additional 48 jobs and \$5.98 million to the local economy. Purchases by households that have one or more members employed at the commercial cattle operation or in the indirect support industries add another 20 jobs and \$871,000 in value.

The total impact of a commercial cattle operation, including both direct and spin-off effects, adds 93 new jobs and generates \$20.59 million in new value added to the county economy. This is a sizable impact in the county, increasing total employment by 1.8 percent and total value added by 6.9 percent. In addition, cattle operations generate \$1.84 million in state tax revenues and \$1.40 million in local tax revenues. It is important to note that these are



**Table 2. Economic impact of a commercial cattle operation with 25 percent local ownership in a rural Nebraska county.**

<i>Industry</i>	<i>Employment Impacts<sup>1</sup></i>				<i>Value Added Impacts Millions (2006\$)</i>			
	<i>Direct</i>	<i>Indirect</i>	<i>Induced</i>	<i>Total</i>	<i>Direct</i>	<i>Indirect</i>	<i>Induced</i>	<i>Total</i>
Cattle Ranching and Farming	25	6	0	<b>31</b>	\$13.741	\$3.512	\$0.003	<b>\$17.255</b>
Other Agricultural Production	0	11	0	<b>12</b>	\$0.002	\$0.756	\$0.006	<b>\$0.763</b>
Mining	0	0	0	<b>0</b>	\$0.000	\$0.000	\$0.000	<b>\$0.000</b>
Utilities	0	0	0	<b>0</b>	\$0.000	\$0.000	\$0.000	<b>\$0.000</b>
Construction	0	4	0	<b>4</b>	\$0.000	\$0.159	\$0.004	<b>\$0.163</b>
Manufacturing	0	0	0	<b>1</b>	\$0.006	\$0.033	\$0.018	<b>\$0.057</b>
Wholesale Trade	1	2	1	<b>3</b>	\$0.028	\$0.081	\$0.056	<b>\$0.164</b>
Transportation and Warehousing	0	2	1	<b>3</b>	\$0.007	\$0.083	\$0.022	<b>\$0.112</b>
Retail Trade	4	1	6	<b>11</b>	\$0.080	\$0.024	\$0.142	<b>\$0.245</b>
Information	0	0	0	<b>1</b>	\$0.006	\$0.011	\$0.016	<b>\$0.034</b>
Finance and Insurance	0	6	1	<b>7</b>	\$0.038	\$0.733	\$0.070	<b>\$0.841</b>
Real Estate and Rental	0	0	0	<b>1</b>	\$0.003	\$0.021	\$0.008	<b>\$0.032</b>
Professional and Scientific Services	0	7	0	<b>8</b>	\$0.004	\$0.162	\$0.013	<b>\$0.180</b>
Management of Companies	0	0	0	<b>0</b>	\$0.000	\$0.000	\$0.000	<b>\$0.000</b>
Administrative and Waste Services	0	0	0	<b>1</b>	\$0.001	\$0.007	\$0.006	<b>\$0.014</b>
Educational Services	0	0	0	<b>0</b>	\$0.000	\$0.000	\$0.000	<b>\$0.000</b>
Health and Social Services	3	0	5	<b>8</b>	\$0.082	\$0.000	\$0.166	<b>\$0.248</b>
Arts, Entertainment, and Recreation	0	0	0	<b>1</b>	\$0.004	\$0.000	\$0.008	<b>\$0.013</b>
Accommodation and Food Services	2	0	3	<b>5</b>	\$0.022	\$0.005	\$0.038	<b>\$0.066</b>
Other Services	1	7	3	<b>10</b>	\$0.013	\$0.229	\$0.028	<b>\$0.270</b>
Government and Other	0	2	1	<b>3</b>	\$0.179	\$0.210	\$0.335	<b>\$0.724</b>
<b>TOTAL</b>	<b>36</b>	<b>50</b>	<b>22</b>	<b>107</b>	<b>\$14.216</b>	<b>\$6.027</b>	<b>\$0.937</b>	<b>\$21.180</b>

<sup>1</sup>Numbers may not sum due to rounding. Impacts generated using IMPLAN.  
Analysis by the Department of Agricultural Economics, University of Nebraska–Lincoln.

**Table 3. Economic impact of a commercial cattle operation with 50 percent local ownership in a rural Nebraska county.**

<i>Industry</i>	<i>Employment Impacts<sup>1</sup></i>				<i>Value Added Impacts Millions (2006\$)</i>			
	<i>Direct</i>	<i>Indirect</i>	<i>Induced</i>	<i>Total</i>	<i>Direct</i>	<i>Indirect</i>	<i>Induced</i>	<i>Total</i>
Cattle Ranching and Farming	25	6	0	<b>31</b>	\$13.741	\$3.513	\$0.003	<b>\$17.257</b>
Other Agricultural Production	0	12	0	<b>12</b>	\$0.004	\$0.756	\$0.006	<b>\$0.767</b>
Mining	0	0	0	<b>0</b>	\$0.000	\$0.000	\$0.000	<b>\$0.000</b>
Utilities	0	0	0	<b>0</b>	\$0.000	\$0.000	\$0.000	<b>\$0.000</b>
Construction	0	4	0	<b>4</b>	\$0.000	\$0.161	\$0.004	<b>\$0.165</b>
Manufacturing	0	1	0	<b>1</b>	\$0.013	\$0.036	\$0.019	<b>\$0.067</b>
Wholesale Trade	1	2	1	<b>4</b>	\$0.056	\$0.085	\$0.060	<b>\$0.200</b>
Transportation and Warehousing	0	2	1	<b>3</b>	\$0.014	\$0.089	\$0.024	<b>\$0.126</b>
Retail Trade	7	1	7	<b>15</b>	\$0.159	\$0.028	\$0.152	<b>\$0.339</b>
Information	0	0	0	<b>1</b>	\$0.012	\$0.015	\$0.018	<b>\$0.044</b>
Finance and Insurance	1	6	1	<b>7</b>	\$0.076	\$0.739	\$0.075	<b>\$0.890</b>
Real Estate and Rental	0	0	0	<b>1</b>	\$0.006	\$0.022	\$0.008	<b>\$0.037</b>
Professional and Scientific Services	0	7	1	<b>8</b>	\$0.008	\$0.165	\$0.014	<b>\$0.188</b>
Management of Companies	0	0	0	<b>0</b>	\$0.000	\$0.000	\$0.000	<b>\$0.000</b>
Administrative and Waste Services	0	1	0	<b>1</b>	\$0.002	\$0.009	\$0.006	<b>\$0.017</b>
Educational Services	0	0	0	<b>0</b>	\$0.000	\$0.000	\$0.000	<b>\$0.000</b>
Health and Social Services	5	0	6	<b>11</b>	\$0.164	\$0.000	\$0.178	<b>\$0.341</b>
Arts, Entertainment, and Recreation	0	0	0	<b>1</b>	\$0.008	\$0.001	\$0.009	<b>\$0.018</b>
Accommodation and Food Services	3	1	3	<b>7</b>	\$0.045	\$0.007	\$0.040	<b>\$0.092</b>
Other Services	2	7	3	<b>12</b>	\$0.025	\$0.230	\$0.031	<b>\$0.286</b>
Government and Other	1	2	1	<b>3</b>	\$0.359	\$0.215	\$0.358	<b>\$0.933</b>
<b>TOTAL</b>	<b>46</b>	<b>51</b>	<b>23</b>	<b>120</b>	<b>\$14.691</b>	<b>\$6.072</b>	<b>\$1.003</b>	<b>\$21.766</b>

<sup>1</sup>Numbers may not sum due to rounding. Impacts generated using IMPLAN.  
Analysis by the Department of Agricultural Economics, University of Nebraska–Lincoln.

gross revenue estimates that do not count government costs like tax abatements and new government services.

Local ownership of the commercial cattle operation increases the economic and fiscal impact to the county economy. A 25 percent locally owned commercial cattle operation creates 107 new jobs and \$21.18 million in added value. Assuming 50 percent local ownership, the county economy would gain 120 new jobs and generate \$21.77 million in new value.

Perhaps the most contentious issue related to large commercial cattle operations is the potential environmental impact on the ecosystem. Current research does not provide a clear understanding of these issues. In 2002 the University of Minnesota conducted an extensive

review of existing research and found little agreement on either the benefits or costs of feedlots to the environment (Minnesota Environmental Quality Board). Although a properly designed feedlot should greatly minimize any adverse environment impact, it is wise public policy to plan for any environmental contingency that may occur.

## Reference

Minnesota Environmental Quality Board. 2002. Final Animal Agriculture Generic Environmental Impact Statement. September 2002 by the Minnesota Planning Agency. St. Paul, MN: Minnesota Department of Administration. Accessed at <http://www.eqb.state.mn.us/geis/GEIS-AnimalAgFinal.pdf>

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