

2014 SOUTH DAKOTA AGRICULTURAL ECONOMIC CONTRIBUTION STUDY

PREPARED BY



WITH ASSISTANCE FROM



EXECUTIVE SUMMARY

The results of this analysis show that agriculture is a critical component of South Dakota's overall economic well-being. South Dakota agriculture is connected to a large integrated set of industries – from the production of agricultural commodities to food and feed processing to agricultural input manufacturing and many other ag-support industries. The results of the analysis indicate that diminishment or removal of any one of them will likely cause significant negative impacts to the others.

This study is based on a combination of datasets from the 2012 Census of Agriculture, USDA/Risk Management Agency, and the IMPLAN modeling system. The analysis also shows that South Dakota has an agricultural resource base that continues to grow with and support the state's economy at large, primarily due to its integration across all sectors of the economy. Given the vitality of South Dakota's agricultural industries, it is reasonable to assume that South Dakota's agricultural base has room for continued growth and will remain a key part of the state's economic well-being.

KEY FINDINGS

- In 2012, total production agriculture and ag-related industries accounted for \$25.6 billion, or more than 30 percent of South Dakota's total.
- Farming provides the base for a variety of agri-food industries, including food processing and the manufacture of farm machinery, chemicals and fertilizer. Taking those jobs into account means that in 2012, production agriculture and ag-related industries accounted for 115,651, or 1 in every 5 South Dakotans.
- Crop farming is a significant part of agriculture's economic contribution. Statewide output attributed to crop production and further processing is more than \$13.3 billion and is responsible for 70,104 jobs.
- Livestock farming is also a significant part of agriculture's economic contribution. Statewide output attributed to livestock production and further processing is just under \$8.6 billion and is responsible for 30,303 jobs.
- 37 of South Dakota's counties derive at least one half of their total output from ag and ag-related industries.
- 34 of South Dakota's counties derive at least one third of their total jobs from ag and ag-related industries.
- 26 of South Dakota's counties derive at least one fourth of their total jobs from the crop and crop processing industries.
- 26 of South Dakota's counties derive at least one fifth of their total output from the livestock and meat processing industries.

STUDY OVERVIEW

This study is patterned after similar analyses done in Iowa in 2005, 2009 and 2014 (forthcoming). This analysis used the same methodology and estimating procedures as these studies in Iowa. The study relies heavily on data from the 2012 Census of Agriculture and the IMPLAN modeling system.

The intent of the study has been to develop an understanding of the current economic importance of South Dakota agriculture and what significance it plays in South Dakota's economy. For that reason, this study is called an economic contribution analysis.

¹Due to the drought of 2012 in South Dakota, many South Dakota counties had significant crop insurance indemnities. To account for this, 2012 actual crop insurance indemnities by county were added to county crop sales as reported by the 2012 Census of Agriculture.

METHODOLOGY

The 2014 South Dakota Ag Economic Contribution Study was completed with a combination of the 2012 Census of Agriculture, the IMPLAN modeling system (2012 data), SAS (Statistical Analysis System), and Microsoft Excel 2013. Results from this analysis are presented within this Agricultural Statistics book using common economic terms.

The economic terms are:

Output

The most broad measure of economic activity – sometimes referred to as “sales”

Employment (Jobs)

A measure of job positions without regard to whether they are full-time equivalents

Value-Added

A combination of Labor Income (defined below), Other Property Type Income, and Tax on Production and Imports

Labor Income

The sum of Employee Compensation (work for hire) and Proprietor Income (self-employed) and is a sub-component of value-added.

Due to the large number of sectors available for analysis within the IMPLAN modeling system (440), a degree of aggregation was undertaken to better understand the contribution of agriculture to each of South Dakota's counties relative to other important South Dakota industries. In all, there are 58 sectors identified as being related to agriculture, some of which are not present in South Dakota (i.e., Tobacco Farming and Cotton Farming). In some cases (production agriculture sectors), the 2012 Census of Agriculture was used to calibrate the IMPLAN data for greater accuracy. The rest of South Dakota's industries were aggregated into fourteen other key non-ag industries in South Dakota.

Upon identification of the 58 IMPLAN agricultural sectors, they were further aggregated into three broad agricultural classes: **Crops, Livestock, and Other Agriculture**. Examples of some sectors included in each of these broad classes are listed below. A summary of Non-Agricultural Sectors is also provided.

Crops

Oilseed Farming, Grain Farming, Vegetable and Melon Farming, Greenhouse, Nursery, and Floriculture Production, Forest Nurseries, Forest Products, and Timber Tracts, Logging, Flour Milling and Malt Manufacturing, Wet Corn Milling, Soybean and Other Oilseed Processing, and Fruit and Vegetable Canning, Pickling, and Drying.

Livestock

Cattle Ranching and Farming, Dairy Cattle and Milk Production, Poultry and Egg Production, Animal Production (Except Cattle and Poultry and Eggs (Hogs)), Fishing, Hunting and Trapping, Fluid Milk and Butter Manufacturing, Cheese Manufacturing, Animal (Except Poultry) Slaughtering, Rendering, and Processing, and Poultry Processing

Other Agriculture

Support Activities for Agriculture and Forestry, Other Animal Food Manufacturing, Fats and Oils Refining and Blending, Breakfast Cereal Manufacturing, Frozen Food Manufacturing, Fertilizer Manufacturing, Pesticide and Other Ag Chemical Manufacturing, Farm Machinery and Equipment Manufacturing, and Veterinary Services

Non-Agricultural Sectors

Construction, Entertainment, Financial, Government, Households, Information, Manufacturing, Mining, Remainder, Retail, Services, Transportation, Utilities, and Wholesale

Please email (spence@decision-innovation.com) or call (515.257.6077) for further information related to methodology.

VISUALS

Figure 1, South Dakota Output by Industry

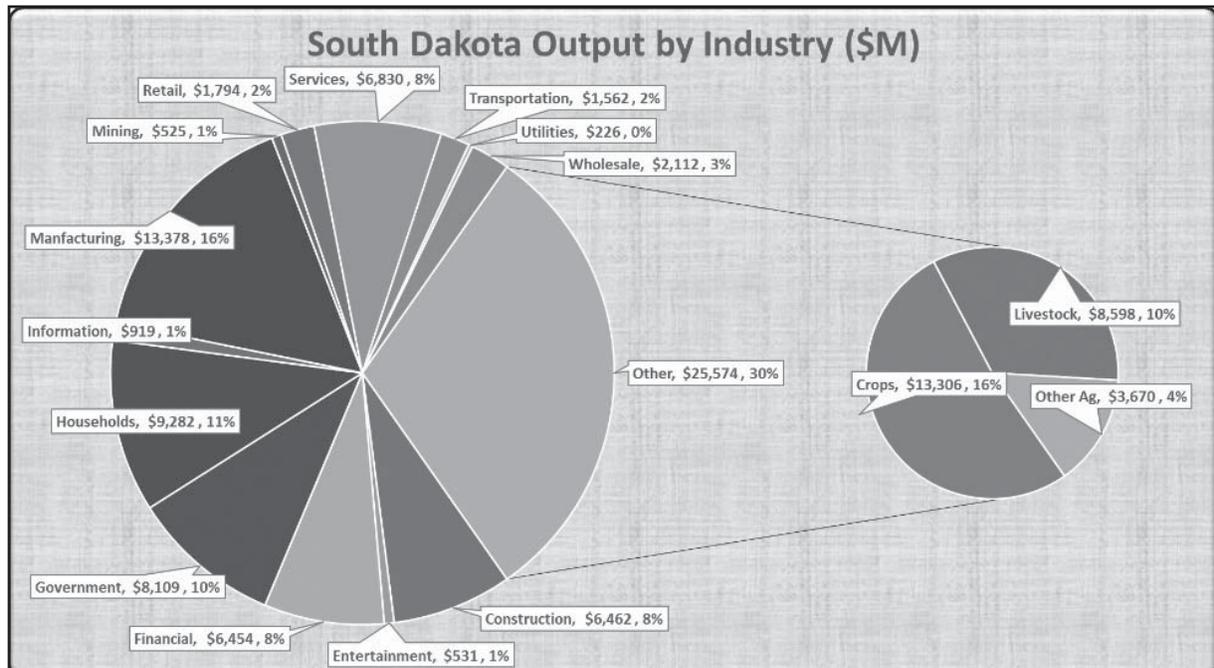


Figure 1 provides an illustration of the level of output derived from each of South Dakota's major industries. As shown, a combination of Crops, Livestock, and Other Ag comprise 30% of all economic activity in South Dakota. Other significant industries include Manufacturing (16%), Government (10%), Financial (8%), Construction (8%), and Services (8%).

Figure 2, South Dakota Jobs by Industry

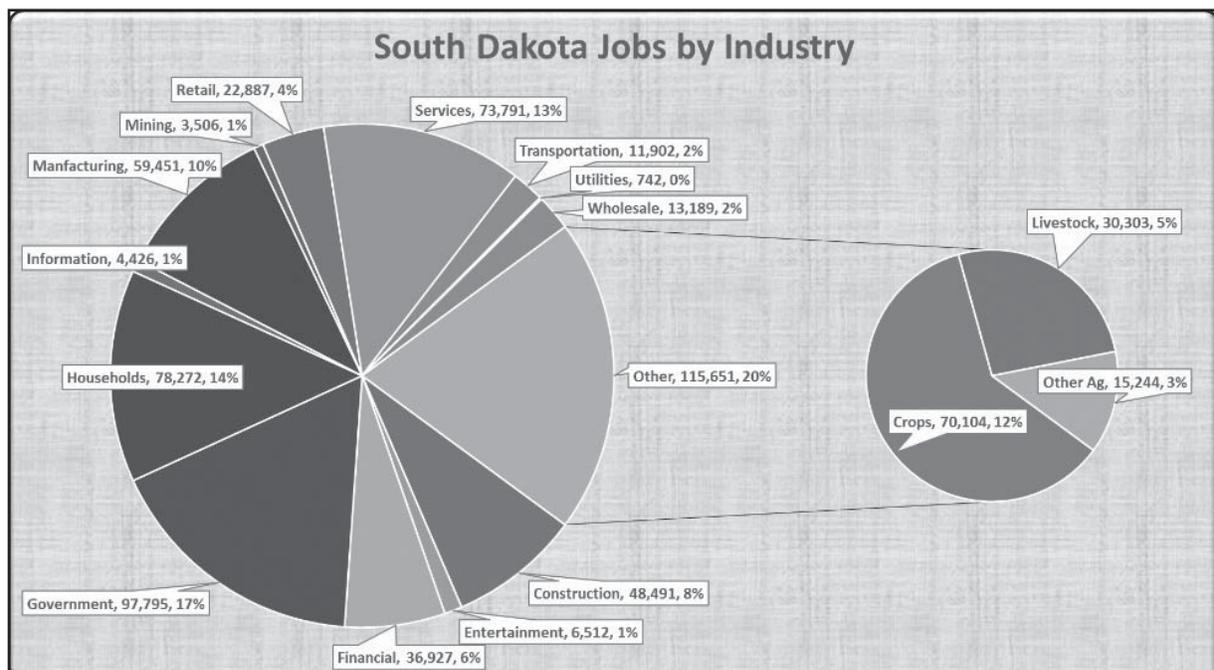


Figure 2 shows the number of jobs originating from South Dakota's major industries. As shown, Crops, Livestock, and Other Ag provide 20% of all jobs in South Dakota. Other significant industries include Government (17%), Services (13%), Manufacturing (10%), and Construction (8%).

Figure 3, Output Derived from Total Ag (\$M)

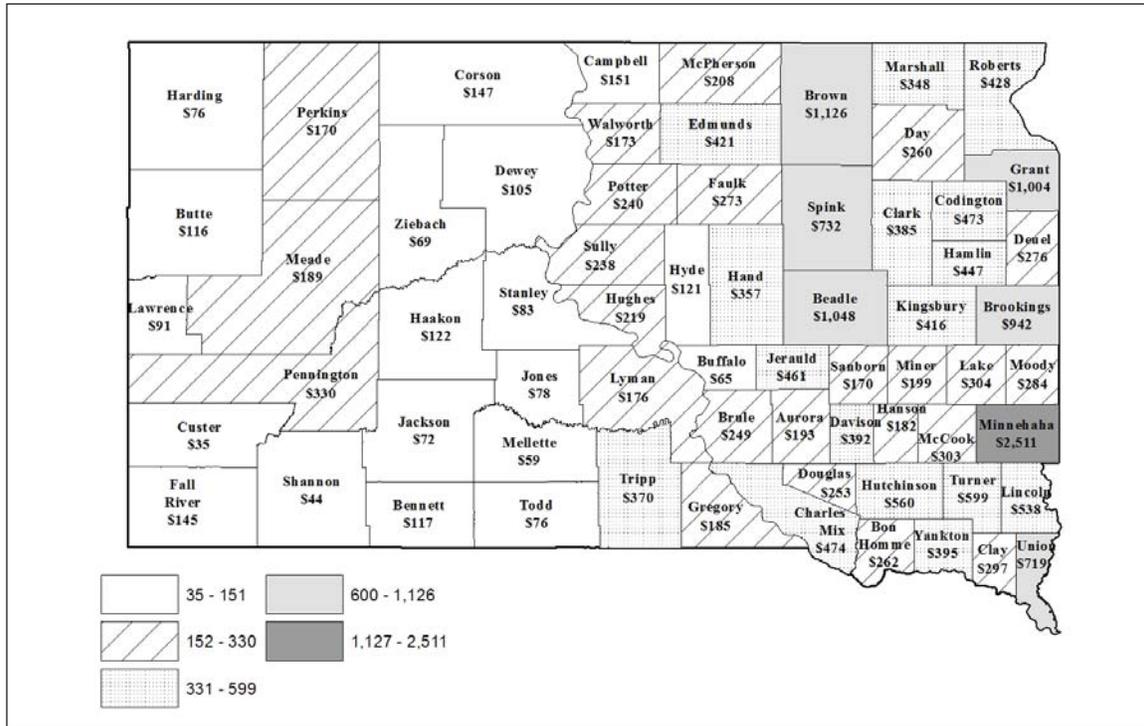


Figure 4, Percent of Output Derived from Total Ag

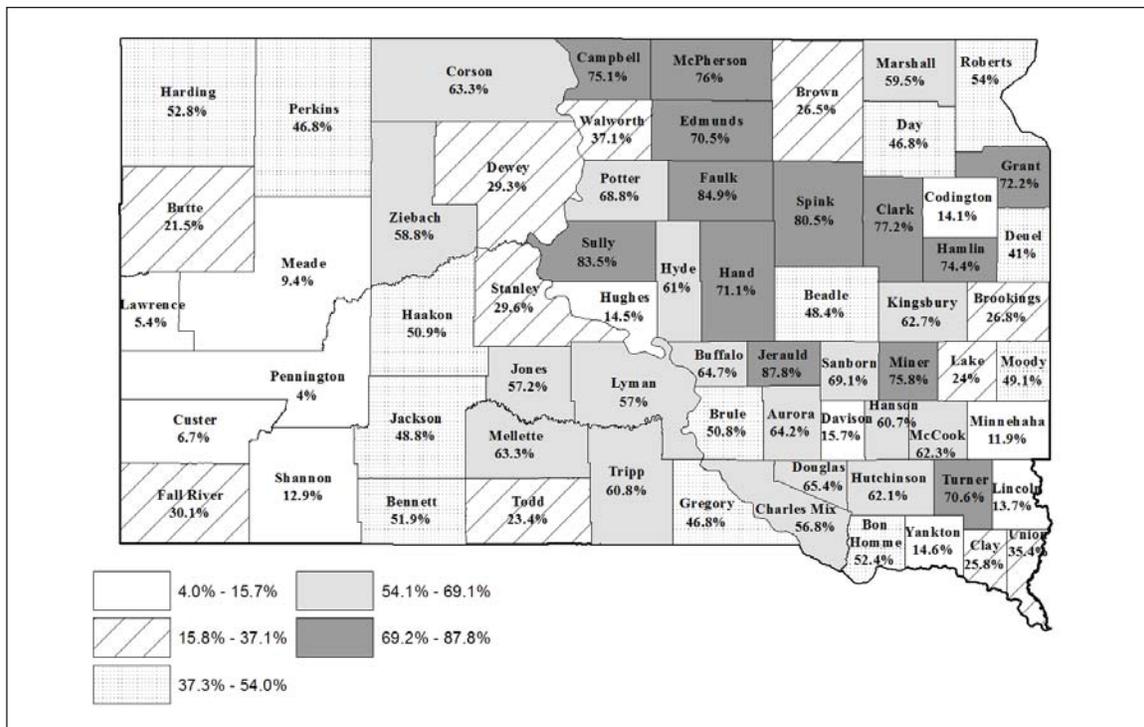


Figure 3 and Figure 4 illustrates the degree to which each South Dakota county derives its output from all of South Dakota agriculture (Crops, Livestock, Other Ag). As shown, as one moves from west to east, counties derive an increasing level of economic activity from agriculture. However, the percent of output derived from agriculture tends to make up a higher share of output the more rural a county is. The share of output derived from all of agriculture ranges from 4.1% to 87.8%.

Figure 5, Jobs Derived from Total Ag

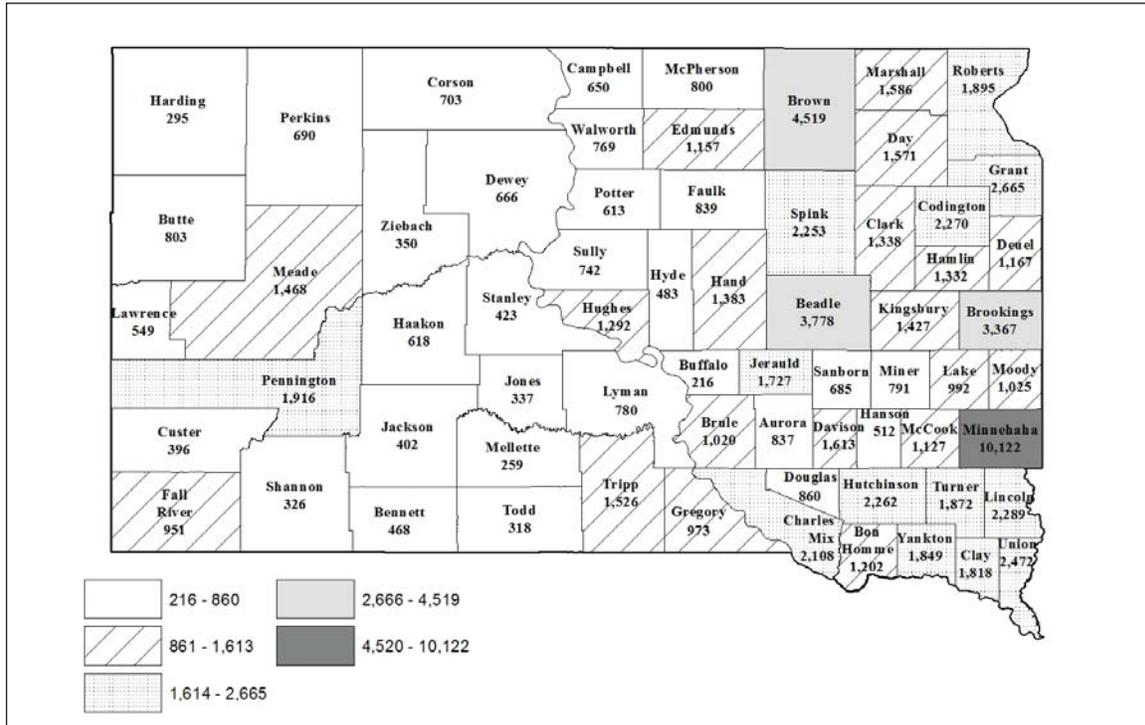


Figure 6, Percent of Jobs Derived from Total Ag

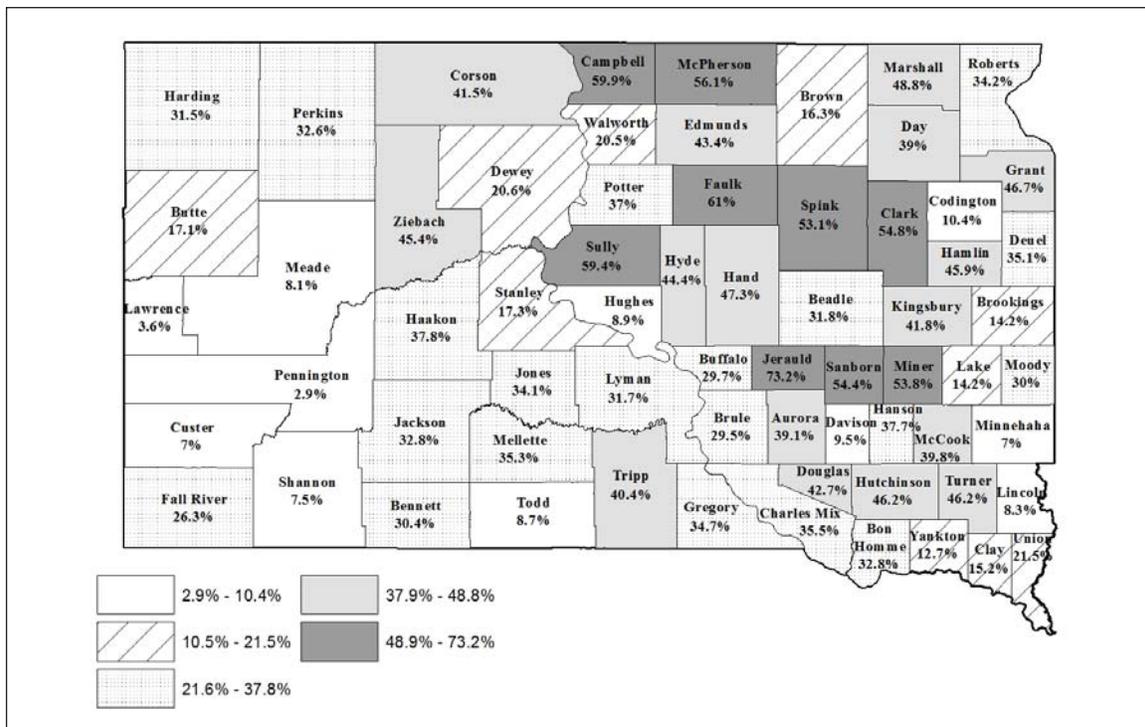


Figure 5 and Figure 6 illustrates the number of jobs by county that find their origins from all of South Dakota agriculture (Crops, Livestock, and Other Ag). As shown, eastern South Dakota counties tend to have a higher number of jobs with origins in South Dakota agriculture. However, the share of jobs derived from agriculture tends to make up a higher share of output the more rural a county is. The share of jobs derived from all of agriculture ranges from 2.9% to 73.2%.

Figure 7, Output Derived from Crops

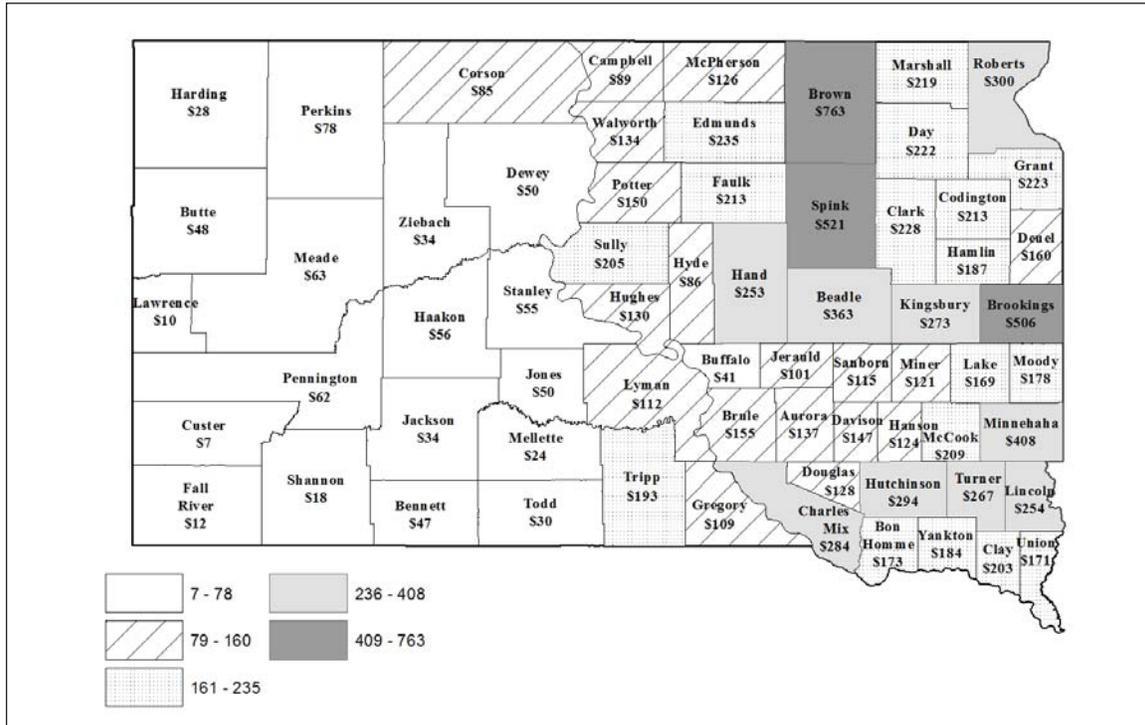


Figure 8, Percent of Output Derived from Crops

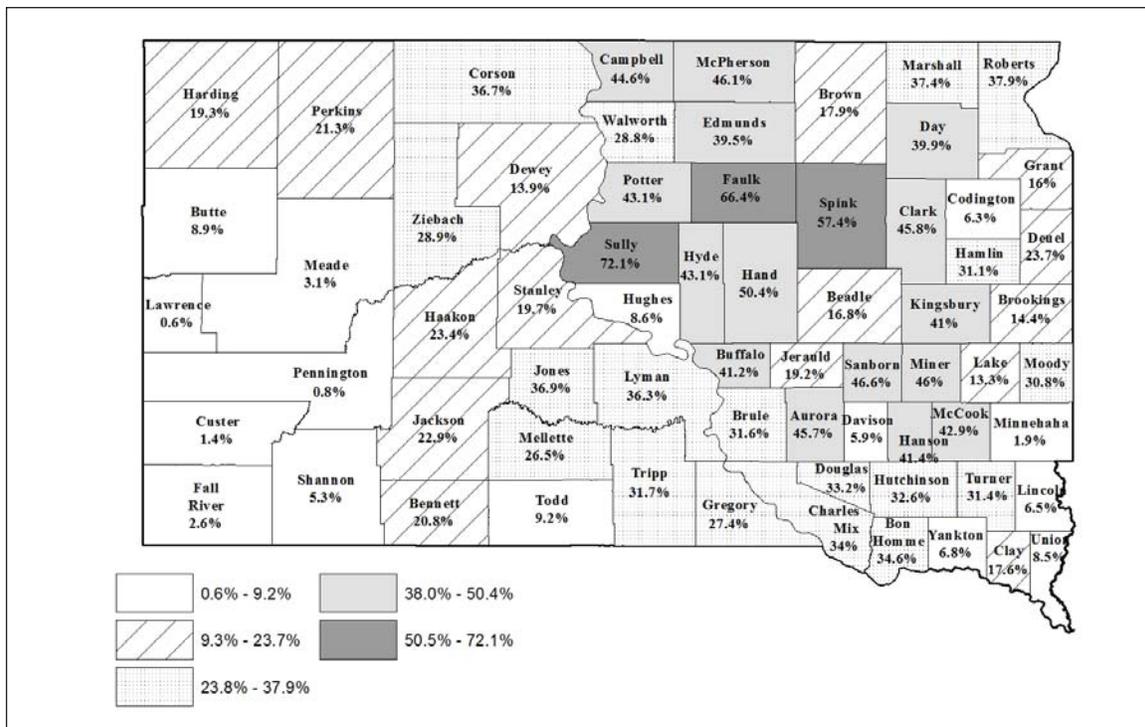


Figure 7 and Figure 8 illustrates the degree to which each South Dakota county derives its output from production and processing of crops. As shown, as one moves from west to east, counties derive an increasing level of economic activity from the production and processing of crops. When the share of output derived from the production and processing of crops is mapped, we see a higher share in counties in the central part of the state. The share of output derived from the production and processing of crops ranges from 0.6% to 72.1%.

Figure 9, Jobs Derived from Crops

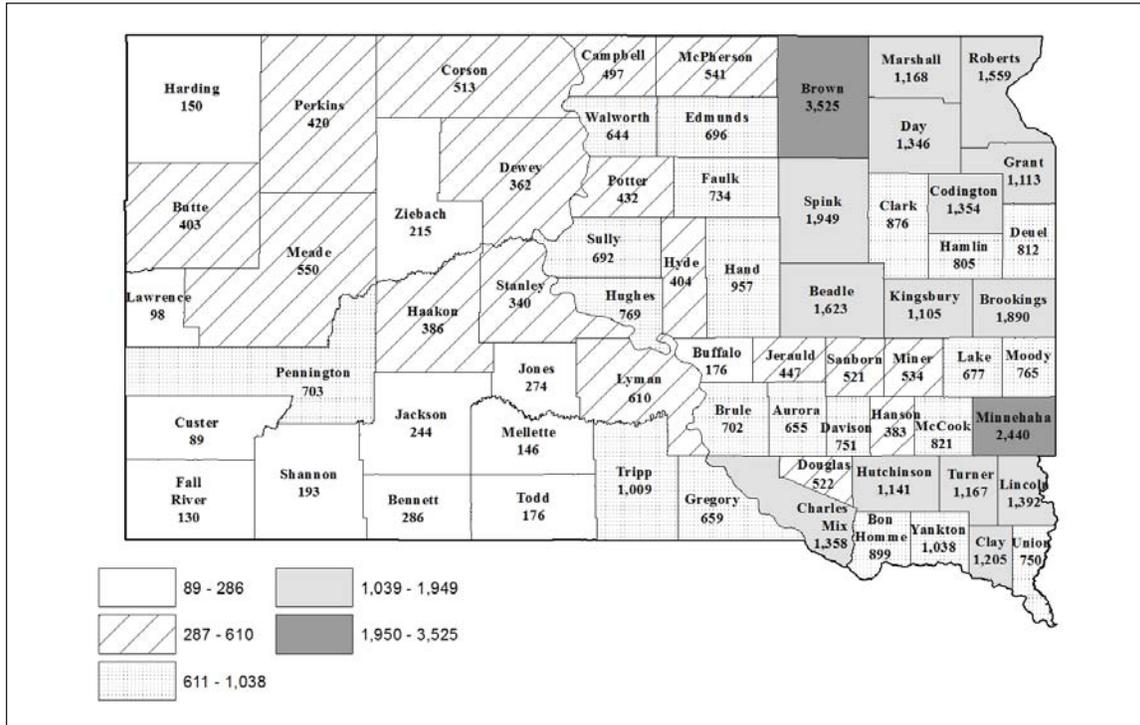


Figure 10, Percent of Jobs Derived from Crops

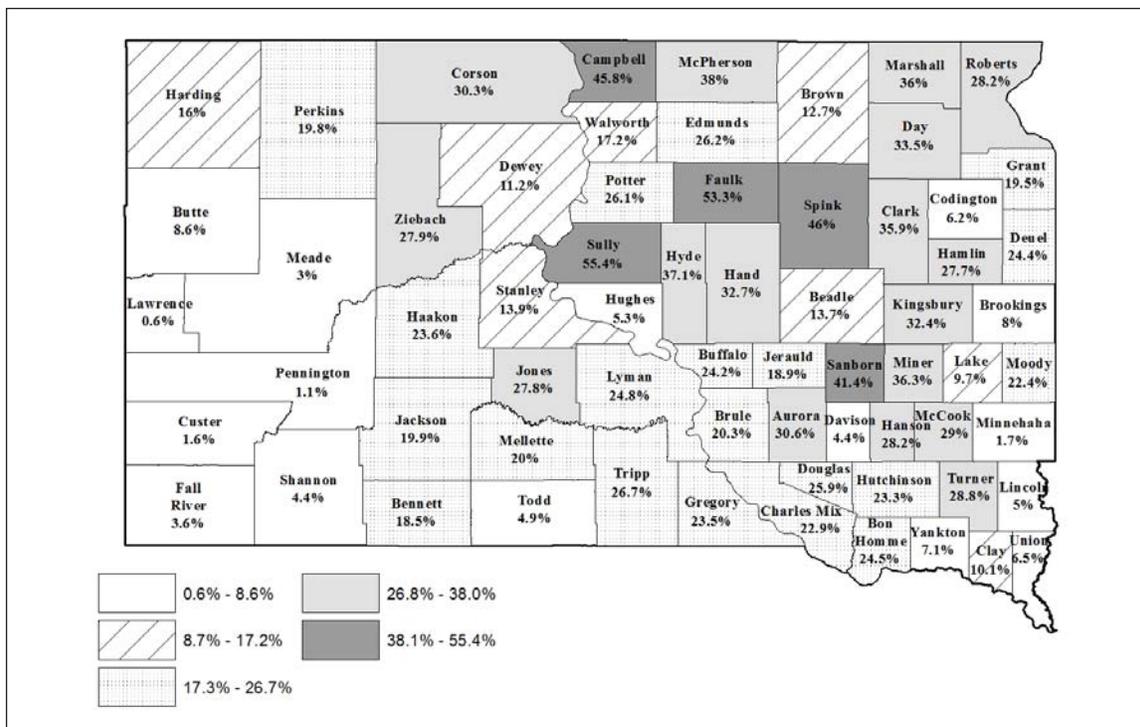


Figure 9 and Figure 10 illustrates the number of jobs that find their origins in the production and processing of crops. As shown, eastern South Dakota counties tend to have a higher number of jobs with origins in the production and processing of South Dakota crops. When the share of jobs derived from the production and processing of crops is mapped, we see a higher share in counties in the central part of the state. The share of output derived from the production and processing of crops ranges from 0.6% to 55.4%.

Figure 11, Output Derived from Livestock

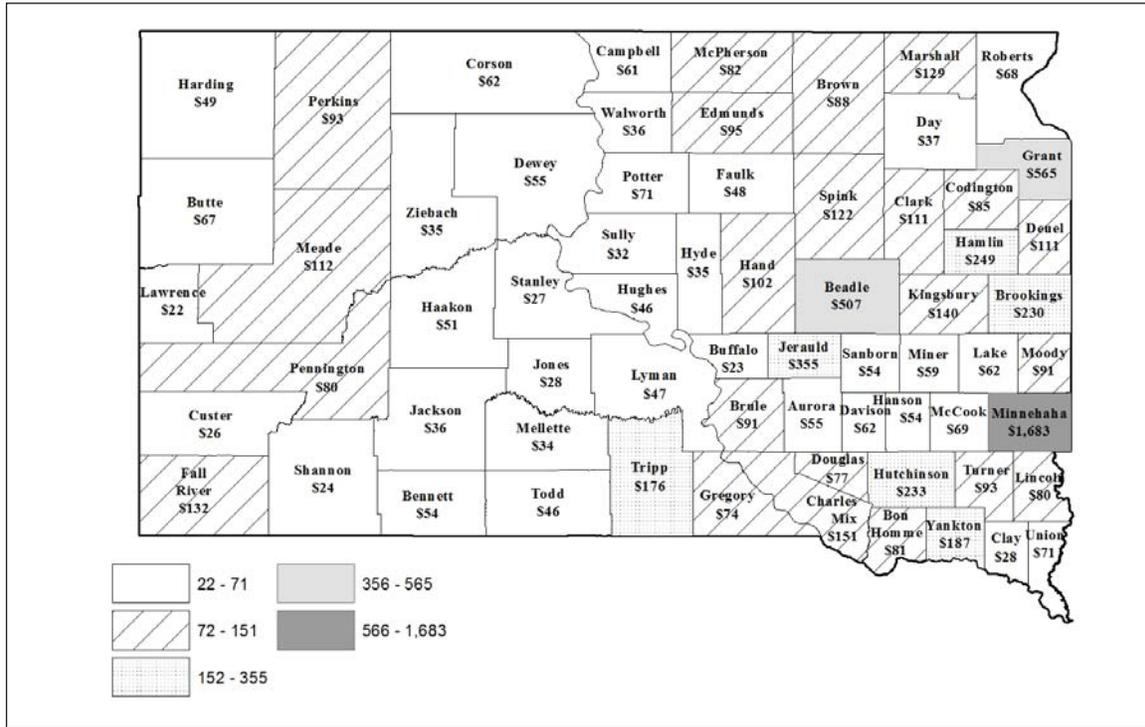


Figure 12, Percent of Output Derived from Livestock

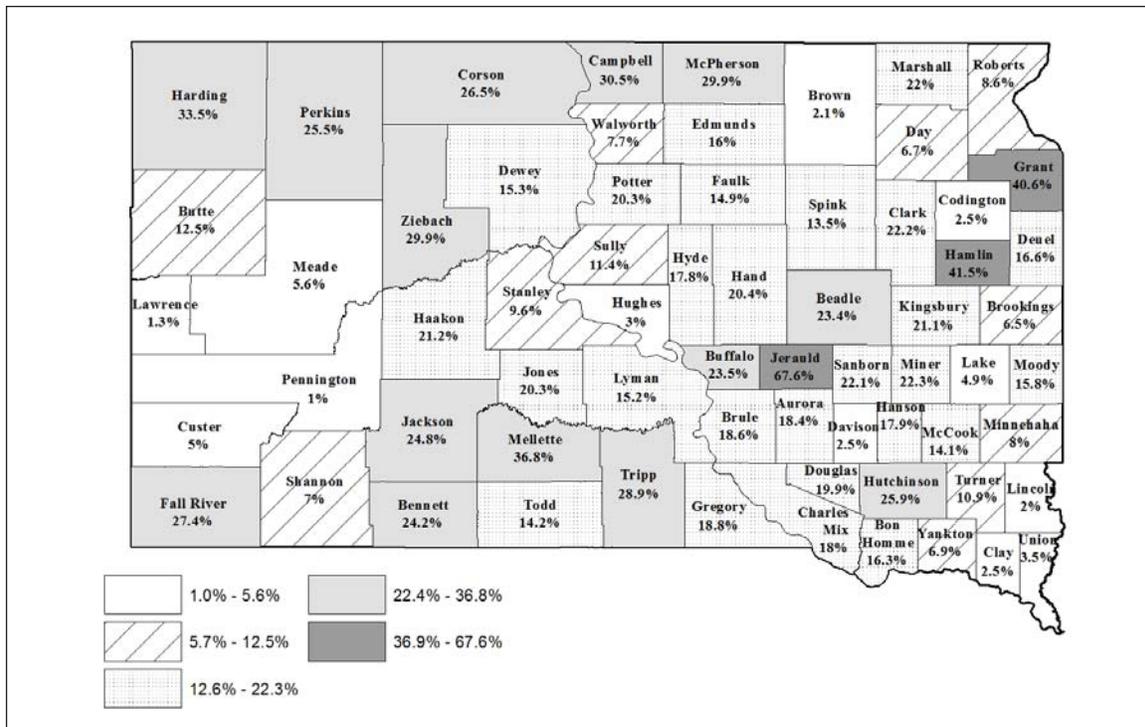


Figure 11 and Figure 12 illustrates the degree to which each South Dakota county derives its output from production and processing of livestock. With the exception of a few eastern counties, there is no clear pattern with regard to the level of economic activity from the production and processing of livestock. When the share of output derived from the production and processing of livestock is mapped, we see fairly even distribution across the state. The share of output derived from the production and processing of livestock ranges from 1.0% to 67.6%.

Figure 13, Jobs Derived from Livestock

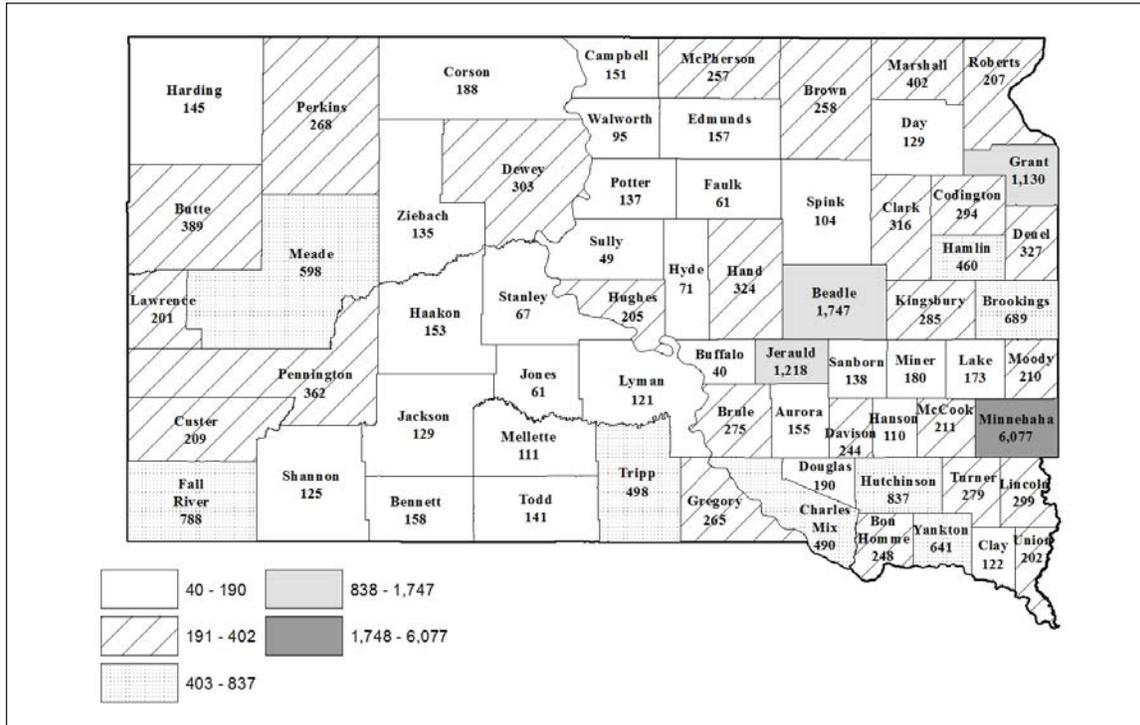


Figure 14, Percent of Jobs Derived from Livestock

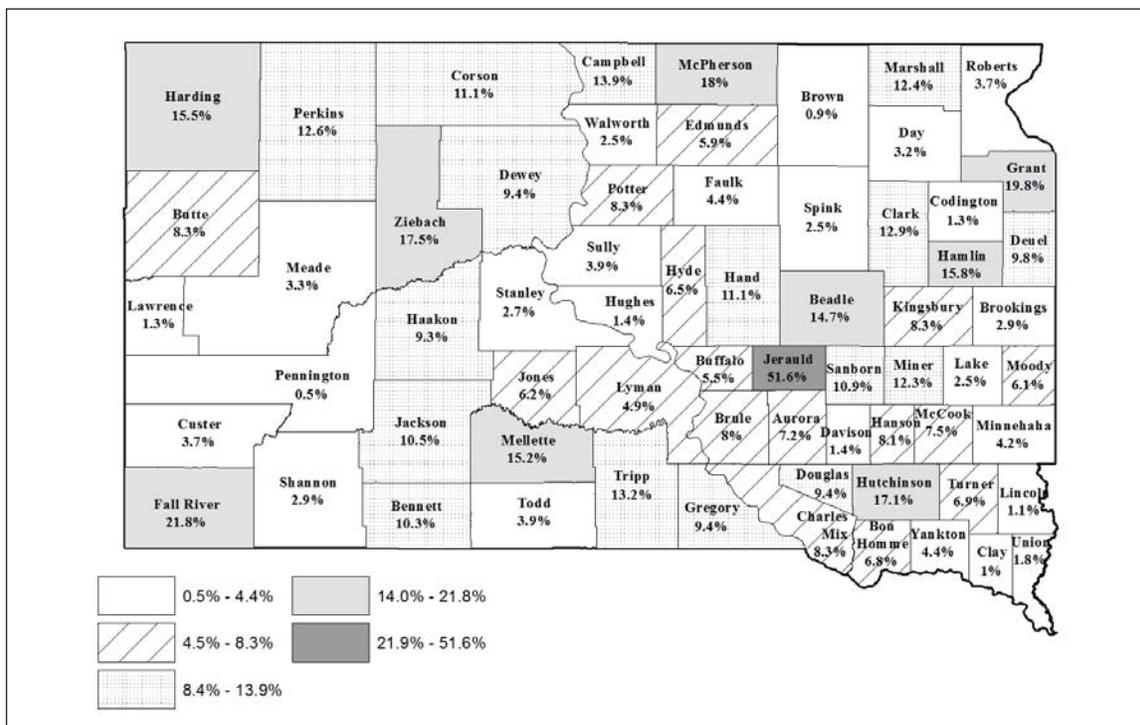


Figure 13 and Figure 14 illustrates the number of jobs that find their origins in the production and processing of livestock. As shown, eastern South Dakota counties tend to have a higher number of jobs with origins in the production and processing of South Dakota livestock. When the share of jobs derived from the production and processing of livestock is mapped, we see no distinct pattern across the state. The share of jobs derived from the production and processing of livestock ranges from 0.6% to 51.6%.