### ECONOMIC IMPACT OF AGRICULTURE AND RELATED INDUSTRIES

**STATE TOTALS**

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</thead>
<tbody>
<tr>
<td>Jobs Linked to Ag-Related Industries</td>
<td>97,828</td>
<td>69,059</td>
<td>59,605</td>
<td>140,234</td>
<td>389,553</td>
</tr>
<tr>
<td>Percentage of Ag-Related Total Employment</td>
<td>18.9%</td>
<td>13.8%</td>
<td>10.2%</td>
<td>28.6%</td>
<td>28.6%</td>
</tr>
<tr>
<td>Total GDP in $ Billions (2019)</td>
<td>$47.0</td>
<td>$43.1</td>
<td>$62.8</td>
<td>$42.2</td>
<td>$195.1</td>
</tr>
<tr>
<td>GDP Linked to Ag-Related Industries in $ Billions</td>
<td>$9.7</td>
<td>$6.8</td>
<td>$6.1</td>
<td>$14.6</td>
<td>$40.0</td>
</tr>
<tr>
<td>Production (crops, livestock, forestry, fishing, etc.)</td>
<td>$1.9</td>
<td>$1.7</td>
<td>$1.1</td>
<td>$6.3</td>
<td>$11.1</td>
</tr>
<tr>
<td>Processing (food &amp; kindred, ethanol)</td>
<td>$5.7</td>
<td>$4.0</td>
<td>$4.3</td>
<td>$7.4</td>
<td>$23.9</td>
</tr>
<tr>
<td>Other Ag-Related Manufacturing (chemicals, machinery, etc.)</td>
<td>$2.1</td>
<td>$1.1</td>
<td>$0.8</td>
<td>$0.9</td>
<td>$4.9</td>
</tr>
<tr>
<td>Ag-Related Percentage of total GDP</td>
<td>20.7%</td>
<td>15.7%</td>
<td>9.7%</td>
<td>34.7%</td>
<td>20.5%</td>
</tr>
</tbody>
</table>

**ECONOMIC IMPACT OF AGRICULTURE AND RELATED INDUSTRIES**

**COUNCIL FOR AGRICULTURAL RESEARCH, EXTENSION AND TEACHING**

**MARCH 2021**

**IMPACT, JOBS AND CONSUMERS**

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<tr>
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<tbody>
<tr>
<td>Education</td>
<td>3,438</td>
<td>2,785</td>
<td>6,686</td>
<td>5,002</td>
<td>17,911</td>
</tr>
<tr>
<td>Total direct contacts for Extension and Outreach was 370,496 for FY20; however, all data sets are not available by county.</td>
<td>22,119</td>
<td>14,676</td>
<td>8,637</td>
<td>23,827</td>
<td>69,259</td>
</tr>
<tr>
<td>Alumni</td>
<td>18,730</td>
<td>15,640</td>
<td>42,852</td>
<td>39,296</td>
<td>117,452</td>
</tr>
</tbody>
</table>

### LINKS TO IOWA STATE UNIVERSITY

- **Most undergraduate students enrolled at Iowa State come from Iowa. Total enrollment was 31,825 (26,846 undergraduate students) in fall 2020.**
- **Iowa State has more than 273,045 alumni worldwide, and more than 26,000 College of Agriculture and Life Sciences alumni living in Iowa (49,192 worldwide).**

*Reflects 2019 data. The sum of economic impact values for the four congressional districts does not equal the state total. The state and district values are obtained from a unique input-output model built specifically for that region. The figures include the direct employment and value added produced within these industries, plus the related spinoff activity that they stimulate in the remainder of Iowa’s economy, from crop farming; cattle ranching and farming; dairy cattle and milk production; poultry and egg production; hog and other animal production; forest nurseries, forest products and timber tracts; logging; fishing; hunting and trapping; support activities for agriculture and forestry; food and beverage manufacturing; ethanol and other basic organic chemical manufacturing; fertilizer manufacturing; pesticide and other agricultural chemical manufacturing; and farm machinery and equipment manufacturing.*

### IOWA CARET REPRESENTATIVES

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C-CHANGE CREATES NEW VALUE CHAINS TO FUEL FARMS
Iowa State scientists with the Consortium for Cultivating Human and Naturally reGenerative Enterprise (C-CHANGE) are working to create new value chains on U.S. farms by developing innovative ways for farmers to turn biomass and manure into renewable energy. The project centers on anaerobic digestion, or the process by which microorganisms break down biomatter and produce biogas, which is mostly methane (the main component of natural gas). This has shown promise of profitability for farmers and rural communities, especially in the Midwest.

GENOME TO PHENOME RESEARCH AMPS UP EFFICIENCY, RESILIENCE OF AG
Researchers working from “genomics to phenomics” are exploring how genomes (organisms’ complete set of DNA) influence the expression of observable, phenotypic traits. Better understanding of these relationships helps predict phenotypic traits. Scientists at Iowa State University are collaborating with researchers from across the country to lay the groundwork for a larger federal Agricultural Genome to Phenome Initiative (AG2PI) sponsored by the U.S. Department of Agriculture’s National Institute for Food and Agriculture. The tools and datasets they develop for the analysis of phenotypes can be used across multiple livestock and crop species to improve the output and efficiency of agriculture.

HELPING LIVESTOCK PRODUCERS ADAPT TO COVID SLOWDOWNS
To help Iowa’s pig farmers slow hog growth during the packing industry slowdown caused by COVID-19, ISU Extension and Outreach, Iowa Pork Industry Center, Iowa Department of Agriculture and Land Stewardship and Iowa Pork Producers Association formed an emergency Resource Coordination Center. The center’s collaborative efforts helped over 100 producer systems make plans to manage the slowdown. Also, in partnership with the Iowa Department of Agriculture and Land Stewardship and commodity organizations, the Iowa State University Meats Lab provided essential processing options for beef and pork producers via the Pass the Pork and Beef Up Iowa food insecurity programs and supplied over 175,000 pounds of processed meat to Iowa food banks.

BIOCHAR MITIGATES MANURE-RELATED ODORS, EMISSIONS
Researchers at Iowa State have found carbon-rich biochar can be used to mitigate many odors and volatile organic compounds emitted from swine manure. The results of this study and related research shows the potential to use biochar treatments to improve air quality inside barns, thus improving worker and animal safety, especially during manure agitation. Biochar is a material obtained from a high-temperature process called pyrolysis of certain types of biomass and biowaste.

NEW POULTRY FARM LAUNCHES ISU INTO NEW ERA OF RESEARCH, EDUCATION
Iowa State University dedicated the new Robert T. Hamilton Poultry Teaching and Research Farm south of Ames in March 2020. The nearly $7 million facility was made possible solely through private funding. The facility will accommodate education and research on poultry housing systems, nutrition, food safety and microbiology, flock behavior, genetics, health and welfare, and environmental issues, including waste management.

AG RESEARCH ADVANCES IOWA
The Iowa Agriculture and Home Economics Experiment Station is the research division of the College of Agriculture and Life Sciences that helps Iowa remain a world leader in food production and address societal issues linked to agriculture: economic development, life sciences, the environment, public policy, families and communities.

• #1 – The College of Agriculture and Life Sciences leads the nation in faculty with federal grants and is also #1 in faculty who have received awards and honors.
• #2 – Faculty in agriculture and life sciences at Iowa State rank second nationally for research findings published in scientific journals.

99-COUNTY CAMPUS
With a presence in each of Iowa’s 99 counties, Iowa State University Extension and Outreach connects Iowans to researchers at Iowa State and throughout the land-grant university system. The Agriculture and Natural Resources Extension network of campus-based state specialists and field specialists include: agricultural engineering, commercial horticulture, farm management, field agronomists, beef specialists, swine specialists and dairy specialists.

• 98,200 contacts were made at 1,836 meetings, workshops and field days in 2020.
• 959 virtual presentations and online courses in agriculture and natural resources reached 55,790 live participants in 2020 and another 70,581 via virtual archives.
• 3,943 individual and face-to-face contacts were made by agriculture and natural resources experts communicating with constituents 33,777 times on the phone and through email throughout 2020.

THE CALS ADVANTAGE
The College of Agriculture and Life Sciences (CALS) offers more than 24 undergraduate majors and 35 graduate programs in addition to hands-on opportunities for students to hone skills in leadership, communications and cultural competency, within and across disciplines.

• #3 largest undergraduate student body among agricultural colleges in the nation.
• 98% placement of graduates into careers within six months of graduation.
• $4 million in scholarships provided annually.