

## KENTUCKY AGRICULTURAL EXPERIMENT STATION AND COOPERATIVE EXTENSION SERVICE EXPENDITURE-BASED ECONOMIC IMPACTS

### Impacts consist of three types:

**Direct impacts** (the specific impact of the employment and operational expenditures of the Land-grant University)

**Indirect impacts** (the impact of expenditures by suppliers)

**Induced impacts** (the additional economic impact of the spending of employees and suppliers' employees in the overall economy that can be attributed to the organization's expenditures)

The three types—direct, indirect, and induced—taken together, are considered the **total impacts**.

### Definition of Impact Variables

**Employment:** The number of individuals whose employment is due, totally (direct employment) or in part (indirect or induced employment) to the economic effects of the AES/CES.

**Labor Income:** Measures cash, benefits and non-cash payments received by individuals in the economy.

**Value Added:** The difference between an organization's total output and the cost of its intermediate inputs.

**Output:** The dollar value of production (i.e., sales).

**Tax Revenue:** The dollar value of taxes generated (including social security).

There are direct and indirect economic benefits generated in the economy through the expenditures of the Land-grant University's Agricultural Experiment Station (AES) and Cooperative Extension Service (CES). The following quantify these benefits as economic impacts for the State of Kentucky, first measured for each entity separately and then in a combined table.

These impacts assess the role these specific organizational expenditures and employment play in generating overall regional economic activity, and treats these AES/CES operations as if it were an "industry", but with specific allowances for its public sector nature.

### Kentucky Agricultural Experiment Station Impacts (\$ in Millions)

| Impact Type              | Employment   | Labor Income  | Value Added    | Output         | State & Local Tax Revenue | Federal Tax Revenue |
|--------------------------|--------------|---------------|----------------|----------------|---------------------------|---------------------|
| Direct Effect            | 1,285        | \$56.1        | \$56.5         | \$83.2         | \$1.8                     | \$9.3               |
| Indirect Effect          | 298          | \$11.3        | \$17.2         | \$28.3         | \$1.1                     | \$2.2               |
| Induced Effect           | 496          | \$17.6        | \$31.4         | \$52.7         | \$3.1                     | \$4.1               |
| <b>Total Effect</b>      | <b>2,079</b> | <b>\$84.9</b> | <b>\$105.0</b> | <b>\$164.2</b> | <b>\$6.0</b>              | <b>\$15.6</b>       |
| <b>Impact Multiplier</b> | <b>1.6</b>   | <b>1.5</b>    | <b>1.9</b>     | <b>2.0</b>     |                           |                     |

### Kentucky Cooperative Extension Service Impacts (\$ in Millions)

| Impact Type              | Employment   | Labor Income  | Value Added    | Output         | State & Local Tax Revenue | Federal Tax Revenue |
|--------------------------|--------------|---------------|----------------|----------------|---------------------------|---------------------|
| Direct Effect            | 1,200        | \$64.5        | \$65.3         | \$102.4        | \$2.1                     | \$10.7              |
| Indirect Effect          | 262          | \$9.7         | \$17.2         | \$29.2         | \$1.3                     | \$2.2               |
| Induced Effect           | 547          | \$19.4        | \$34.6         | \$58.1         | \$3.5                     | \$4.5               |
| <b>Total Effect</b>      | <b>2,009</b> | <b>\$93.6</b> | <b>\$117.2</b> | <b>\$189.7</b> | <b>\$6.8</b>              | <b>\$17.3</b>       |
| <b>Impact Multiplier</b> | <b>1.7</b>   | <b>1.5</b>    | <b>1.8</b>     | <b>1.9</b>     |                           |                     |

### Kentucky Combined AES/CES Impacts (\$ in Millions)

| Impact Type              | Employment   | Labor Income   | Value Added    | Output         | State & Local Tax Revenue | Federal Tax Revenue |
|--------------------------|--------------|----------------|----------------|----------------|---------------------------|---------------------|
| Direct Effect            | 2,485        | \$120.5        | \$121.8        | \$185.6        | \$3.8                     | \$19.9              |
| Indirect Effect          | 560          | \$21.0         | \$34.4         | \$57.5         | \$2.4                     | \$4.4               |
| Induced Effect           | 1,043        | \$36.9         | \$66.0         | \$110.8        | \$6.6                     | \$8.6               |
| <b>Total Effect</b>      | <b>4,088</b> | <b>\$178.5</b> | <b>\$222.2</b> | <b>\$353.9</b> | <b>\$12.9</b>             | <b>\$32.9</b>       |
| <b>Impact Multiplier</b> | <b>1.6</b>   | <b>1.5</b>     | <b>1.8</b>     | <b>1.9</b>     |                           |                     |

Source: Land-grant AES/CES input data; input data; Battelle calculations and analysis; IMPLAN 2010 multi-state model