ECONOMIC ASPECTS OF ANIMAL AGRICULTURE

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The Role of Animal Agriculture in a Sustainable 21st Century Global Food System
Board on Agriculture and Natural Resources
The National Academies (National Research Council)
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Economic Dimensions of U.S. Animal Agriculture

- Livestock account for about half of U.S. agricultural cash receipts, exceeding $100 billion per year.

- Agriculture’s share of U.S. GDP has declined from 7.7% in 1930 to only 0.7% in 2002 (USDA, 2005).

- Production of all livestock types, except poultry, has experienced either no growth or negative growth for many years.

- At the same time, the farm-to-retail price spreads for all red meat livestock have been increasing steadily.

- But this has not been the case for poultry.

- Also, per capita consumption of red meat has been declining while that of chicken has been increasing.
GENERAL LIVESTOCK INDUSTRY VALUE CHAIN

PRODUCTION

FEEDLOTS

PACKING

FAB/WILD

EXPORTS

IMPORTS

EXPORTS

IMPORTS

RETAILING/CONSUMERS

RETAIL

DEMAND
Changes in the Sheep Industry
IN THE UNITED STATES
MAKING THE TRANSITION FROM TRADITION
The flow of sheep and lamb through marketing channels from production to end uses.
SHEEP AND LAMB MARKETING CHANNELS

PRODUCERS

- Commercial Feeders

PACKERS

- Chainstore Central Fab/Dist
- Meat Purvey/Fab
- Food Distributor
- General Wholesale Fabrication

WHALESE

- Live Animals
- Carcasses/boxed primals
- Boxed/fabricated
- Block, tray, & case ready
- Retail cuts

RETAIL

- Independent Foodstores
- Local Chain Foodstores
- Food Service
  - Hotels
  - Restaurants
  - Institutions
  - Other

CONSUMERS

Included in this diagram are

- Chain Foodstores

NON-LAMBS

- Lamb Consumers
What is the economic contribution of animal agriculture to the U.S. economy?

What would be the loss in GDP, jobs, wages, and tax revenues if the livestock industry ceased to exist?

The analysis BEGINS by measuring the jobs, revenues, wages and taxes generated by the industry down its supply chain.
The **DIRECT** Effects: Value of output, jobs and wages created, taxes (state, local) generated **down the supply chain**

The **INDIRECT** Effects: Value of output, jobs and wages created, taxes (state, local) generated **through backward linkages**

The **INDUCED** Effects: Spending by industry and supplier employees which generates output, jobs and wages, and taxes
Impacts at each level usually measured with an Input-Output (IO) Model:

- Regional Industrial Multiplier System (RIMS II) (Bureau of Economic Analysis, U.S. Dept. of Commerce)
- Impact Analysis and Planning Model (IMPLAN) (Minnesota IMPLAN Group, Inc.)

Few estimates of the economic contribution of animal agriculture to the U.S. economy.

## Economic Impact of Animal Agriculture
*(Promar International, 2007)*

<table>
<thead>
<tr>
<th>Output ($ million)</th>
<th>Earnings ($ million)</th>
<th>Employment (jobs)</th>
<th>Taxes* ($ million)</th>
</tr>
</thead>
<tbody>
<tr>
<td>$451,357</td>
<td>$83,613</td>
<td>3,364,332</td>
<td>$21,414</td>
</tr>
<tr>
<td>(3.4% of GDP)</td>
<td>(2.3% of U.S.)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*Income, sales, property*
### Economic Impact of the Meat Industry
*(John Dunham & Assoc., 2009)*

<table>
<thead>
<tr>
<th>Output ($ million)</th>
<th>Earnings ($ million)</th>
<th>Employment (jobs)</th>
<th>Taxes* ($ million)</th>
</tr>
</thead>
<tbody>
<tr>
<td>$832,404</td>
<td>$199,692</td>
<td>6,193,639</td>
<td>$83,651</td>
</tr>
<tr>
<td>(6.3% of GDP)</td>
<td>(4.2% of U.S.)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

* Income, sales, property
## Economic Impact of Cattle Industry
*(Otto and Lawrence, 2000)*

<table>
<thead>
<tr>
<th>Output ($ million)</th>
<th>Earnings ($ million)</th>
<th>Employment (jobs)</th>
<th>Taxes* ($ million)</th>
</tr>
</thead>
<tbody>
<tr>
<td>$188,457 (1.4% of GDP)</td>
<td>$46,455</td>
<td>1,421,137 (1.0% of U.S.)</td>
<td></td>
</tr>
</tbody>
</table>

* Income, sales, property

## Economic Impact Sheep and Lamb Industry
*(Shiflett, 2008)*

<table>
<thead>
<tr>
<th>Output ($ million)</th>
<th>Value Added* ($ million)</th>
<th>Employment (jobs)</th>
</tr>
</thead>
<tbody>
<tr>
<td>$2,176 (0.002% of GDP)</td>
<td>$1,198</td>
<td>91,524 (0.1% of U.S.)</td>
</tr>
</tbody>
</table>

* Earnings plus taxes
Results are dependent on:

- Multipliers used
- Choice of region or industry
- Data used
- Aggregations and other assumptions made

Results do NOT account for the effects on feedgrain production and all of its forward and backward linkages.

Results do NOT account for global impacts and earnings (U.S. held foreign operations).