Economic Impacts of Connecticut’s Agricultural Industry

Update 2015

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by

Rigoberto A. Lopez, Rebecca Boehm and Marcela Pineda

Zwick Center for Food and Resource Policy
College of Agriculture, Health and Natural Resources
University of Connecticut
Objectives

1. Update estimates of the impact of Connecticut’s agricultural industries on the state’s economy to 2015.

2. Assess changes in these industries between 2007 and 2015.
Definition of the Agricultural Industry

• **Sectors Included:**
  - Crop and livestock production
  - Forest products
  - Processing of the state’s agricultural production

• **Sectors excluded:**
  - Landscaping and ground keeping services
  - Veterinary services
  - Food and Beverage processing that does not use Connecticut agricultural products
Connecticut Agriculture at a Glance

TOTAL LAND COVER IN CONNECTICUT

2006
- Forests: 55%
- Developed: 19%
- Turf and other grasses: 10%
- Wetland, water and other: 9%
- Agricultural field: 7%

Total area = 3.2 million Acres

2015
- Forests: 54%
- Developed: 19%
- Turf and other grasses: 10%
- Wetland, water and other: 9%
- Agricultural field: 7%
- Barren land and utility corridor: 1%

Total Area = 3.2 million acres

Connecticut Agriculture at a Glance

SALES OF FARM PRODUCTS

2007

Aquaculture 3%
Cattle ranching & farming 3%
Fruit farming 8%
Poultry & eggs 8%
Milk & dairy products 13%
Vegetables & melon farming 6%
Tobacco 10%

Greenhouse, nursery, floriculture, & sod 49%

Total Sales = $551 million

2015

Aquaculture 4%
Cattle ranching & farming 4%
Fruit farming 8%
Poultry & eggs 10%
Milk & dairy products 14%
Vegetables & melon farming 8%
Tobacco 7%

Greenhouse, nursery, floriculture, & sod 45%

Total Sales = $541 million

Connecticut Agriculture at a Glance

SALES OF FOREST PRODUCTS

2007

- Forest nurseries and forest products: 16%
- Sawmills and wood preservation: 38%
- Commercial logging: 44%
- Hunting & trapping: 2%

Total Sales = $132 million

2015

- Forest nurseries and forest products: 31%
- Sawmills and wood preservation: 43%
- Commercial logging: 25%
- Hunting & trapping: 1%

Total sales = $130 million

Connecticut Agriculture at a Glance

SALES BY AG PROCESSING SECTORS

2007

- Animal slaughtering: 21%
- Seafood product preparation: 2%
- Wineries: 4%
- Cheese: 24%
- Fluid milk manufacturing: 13%
- Ice cream & frozen desserts: 15%

Total Sales = $955 million

2015

- Animal slaughtering: 12%
- Seafood product preparation: 3%
- Wineries: 7%
- Cheese: 15%
- Fluid milk manufacturing: 32%
- Ice cream & frozen desserts: 16%
- Fruit & vegetable canning: 15%

Total Sales = $1,200 million

Indicators of impacts

• We use direct sales from Connecticut’s agricultural industries in 2015 as input data

• ECONOMIC MODELS

  1. **IMPLAN** (Impact analysis for PLANing) from a Minnesota company
  2. **RIMS II** (Regional Input - Output Modeling System) from the Bureau of Economic Analysis
  3. **REMI** (Regional Economic Modeling, Inc.) fuller economic model

• Here we only present IMPLAN results

• Detailed IMPLAN and RIMS results provided in the handouts
Indicators of impacts

• Five indicators of impact on the state’s economy

  ➢ Sales
  ➢ Jobs
  ➢ Wages
  ➢ Value added
  ➢ Taxes
Direct sales changes
2007 to 2015 Nominal dollars

Percent change in direct sales from 2007 to 2015 by sector

-100%  -50%  0%  50%  100%  150%

Winery
Cattle ranching and farming
Vegetable and melon farming
Seafood product preparation and packaging
Fluid milk and butter manufacturing
Poultry processing
Ice cream and frozen dessert manufacturing
Sawmills and wood preservation
Fruit farming
Animal production (except cattle, poultry, & eggs)
Support activities for agriculture and forestry
Dairy cattle and milk production
All other crop farming
Greenhouse, nursery, floriculture, and sod
Fruit and vegetable canning, pickling, and drying
Animal (except poultry) slaughtering and processing
Cheese manufacturing
Poultry and egg production
Commercial logging
Tobacco farming
Commercial hunting and trapping
Commercial fishing

Percent change in direct sales

Rate of inflation
## Results – Impacts on sales

<table>
<thead>
<tr>
<th>Sector</th>
<th>Billion dollars</th>
<th>2015-2007 Change</th>
</tr>
</thead>
<tbody>
<tr>
<td>Agricultural and forest production</td>
<td>1.15</td>
<td>1.32</td>
</tr>
<tr>
<td>Primary agricultural processing</td>
<td>1.57</td>
<td>1.91</td>
</tr>
<tr>
<td>Total for agricultural industry</td>
<td>2.72</td>
<td>3.23</td>
</tr>
</tbody>
</table>
Results – Impacts on jobs

<table>
<thead>
<tr>
<th>Sector</th>
<th>Jobs</th>
<th>2015-2007 Change</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>2007</td>
<td>2015</td>
</tr>
<tr>
<td>Agricultural and forest production</td>
<td>13,686</td>
<td>15,485</td>
</tr>
<tr>
<td>Primary agricultural processing</td>
<td>5,636</td>
<td>6,023</td>
</tr>
<tr>
<td>Total for agricultural industry</td>
<td>19,322</td>
<td>21,508</td>
</tr>
</tbody>
</table>

Connecticut’s non-farm employment change (2015-2007): -0.62%
Labor intensity by sector

Jobs per 2015 million dollar sales
## Results – Impacts on wages (labor income)

<table>
<thead>
<tr>
<th>Sector</th>
<th>Million dollars</th>
<th>2015-2007 Change</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>2007</td>
<td>2015</td>
</tr>
<tr>
<td>Agricultural and forest production</td>
<td>295</td>
<td>428</td>
</tr>
<tr>
<td>Primary agricultural processing</td>
<td>261</td>
<td>348</td>
</tr>
<tr>
<td>Total for agricultural industry</td>
<td>556</td>
<td>775</td>
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</tbody>
</table>
## Results – Impacts on value added

<table>
<thead>
<tr>
<th>Sector</th>
<th>Million dollars</th>
<th>2015-2007 Change</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>2007</td>
<td>2015</td>
</tr>
<tr>
<td>Agricultural and forest production</td>
<td>615</td>
<td>611</td>
</tr>
<tr>
<td>Primary agricultural processing</td>
<td>423</td>
<td>576</td>
</tr>
<tr>
<td>Total for agricultural industry</td>
<td>1,038</td>
<td>1,188</td>
</tr>
</tbody>
</table>
Results – Impacts on taxes

<table>
<thead>
<tr>
<th>Sector</th>
<th>Million dollars</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>State &amp; Federal taxes</td>
<td>State taxes</td>
</tr>
<tr>
<td>Agricultural and forest production</td>
<td>37.17</td>
<td>33</td>
</tr>
<tr>
<td>Primary agricultural processing</td>
<td>43</td>
<td>38</td>
</tr>
<tr>
<td>Total for agricultural industry</td>
<td>80.26</td>
<td>71.18</td>
</tr>
</tbody>
</table>
Non-traditional impacts (new!)

- Agritourism
- Direct marketed sales to consumers
- Open space in agricultural land
- Carbon sequestration
Results – Impacts of direct farm sales to consumers and agritourism

<table>
<thead>
<tr>
<th>Sector</th>
<th>million dollars</th>
<th></th>
<th></th>
<th></th>
<th></th>
<th>Jobs</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Sales</td>
<td>Wages</td>
<td>Value Added</td>
<td>State taxes</td>
<td>State and federal taxes</td>
<td></td>
</tr>
<tr>
<td>Direct marketed sales to consumers</td>
<td>74</td>
<td>21</td>
<td>35</td>
<td>1</td>
<td>1</td>
<td>653</td>
</tr>
<tr>
<td>Agritourism</td>
<td>16</td>
<td>6</td>
<td>10</td>
<td>1</td>
<td>1</td>
<td>165</td>
</tr>
</tbody>
</table>
Agritourism value by crop type, 2015

- Fruit and tree nut farming: 44%
- Vegetable and melon farming: 2%
- Aquaculture and all other animal production: 18%
- Sheep and goat farming: 2%
- Poultry and egg production: 2%
- Sugarcane, hay, and miscellaneous crops: 10%
- Tobacco farming: 3%
- All other crop farming: 13%
- Greenhouse, nursery, and floriculture: 6%
Results – Open space and CO\textsubscript{2} sequestration

- **Open space in agricultural land**
  - 440,000 acres total
  - Average WTP per CT household per (nearby) acre per year - $0.31 (2015)
  - Estimated social benefits – requires future study but impacts are significant

- **Carbon sequestered on CT agricultural land**
  - 14,900 metric tons CO\textsubscript{2} sequestered per year
  - Social cost of carbon - $13 - $120/per metric ton CO\textsubscript{2}e
  - Value of externalities averted - $187,000 - $1.8 million/year (2015 dollars)
Conclusions

2015 IMPACTS ARE ESTIMATED AT:

• $3.20 billion to statewide dollar sales
  • 17.64% increase since 2007
  • Approximately $880 per resident

• 20,037 statewide jobs
  • 9% increase since 2007

• $765 million to statewide wages (labor income)
  • 38% increase since 2007

• Non-Traditional Impacts
  • Agritourism and direct sales to consumers generate $90 million in state sales and 818 jobs
  • Open space dollar benefits are significant but unknown
  • Ag land CO₂ sequestration removes pollution from 3,170 cars
THANK YOU!

QUESTIONS?