RECENT AND EMERGING EVIDENCE OF FOOD SYSTEMS AS ECONOMIC DEVELOPMENT

Becca Jablonski
Assistant Professor | Food Systems Extension Economist
Dept. of Agricultural and Resource Economics
Colorado State University
Harvesting Opportunity in Kansas
Lawrence, Kansas
May 31, 2018

1 Farmers win.

In general, farmers and ranchers only receive $1.55 of $10 spent on food. The rest goes to marketers, processors, wholesalers, distributors and retailers.

2 Your community wins.

For every $10 spent on local food, farmers get closer to $8-9. For every $10 spent at a farmers market, studies show that as much as $7.80 is re-spent in your community, supporting local jobs and businesses.
Profit Margin Increases with Farm Size

Farms by operating profit margin (OPM) and farm type, 2015

- Green zone: low risk level (OPM > 25%)
- Red zone: high risk level (OPM < 10%)
- Yellow zone: medium risk level (OPM 10-25%) Not calculated

<table>
<thead>
<tr>
<th>Percent of farms in each group</th>
<th>100</th>
</tr>
</thead>
<tbody>
<tr>
<td>100</td>
<td>0</td>
</tr>
<tr>
<td>75</td>
<td>2</td>
</tr>
<tr>
<td>50</td>
<td>0</td>
</tr>
<tr>
<td>25</td>
<td>0</td>
</tr>
</tbody>
</table>

Notes: Operating profit margin (OPM) = 100% × (net farm income + interest paid – charge for operator and unpaid labor – charge for management) / gross farm income. Small family farms have annual gross cash farm income (GCFI) < $350,000. Midscale family farms have GCFI of $350,000-$999,999. Large-scale family farms have GCFI of $1,000,000 or more. Source: USDA, Economic Research Service and National Agricultural Statistics Service, 2015 Agricultural Resource Management Survey (data as of December 2016).
Documented consumer willingness to pay a premium for local food

- Apples, Vermont
- Apples, Colorado
- Blueberries, Pittsburgh and Orlando
- Tomatoes, national study
- Blackberry jam, "Ohio River Valley" label
- Fresh produce, Vanderburgh County, Indiana
- Apples, national study
- Blackberry jam, "Ohio Proud" or "Kentucky Proud" label

Source: Willingness to pay as a percent of base price calculated from reported results from the following: Apples/Vermont from Wang et al., 2010, averaged over respondents that had and had not purchased organic food. Apples/Colorado from Costanzo et al., 2011. Blueberries from Shi et al., 2013. Tomatoes/national, and Apples/national from Oronzio and Thilmany, 2012. Blackberry jam from Hu et al., 2012. Fresh produce/Vanderburgh County from Burnett et al., 2011.

Sullins et al. 2016

Ground beef prices at farmers markets not impacted by commodity market prices

Non-significant, but negative relationship between USDA retail ground beef prices and Larimer (Old Town) market prices; r (20) = -.415, p<.05

Note: Weekly average retail ground beef prices from https://www.marketnews.usda.gov.

Sullins et al. 2016
In local food channels do farmers retain more of the food dollar? New pricing reports!

There is a likely tradeoff between volume of sales and two key management factors:

1) Managerial control retained by producers

2) Pricing power of producers

Is there an “optimal” place on continuum for an operation?
Mixed Evidence of Farm Performance:
Local food producers grew less between 2007 and 2012, but more likely to have ‘survived’

Low et al. 2015

Market Channel Assessments

How do you evaluate a market opportunity?
Six interacting factors impact the “performance” of a marketing channel including:

- Price & Profit
- Lifestyle Preferences
- Associated Costs
- Sales Volume
- Labor Requirements
- Risk

Matt LeRoux, Cornell Cooperative Extension of Tompkins County
Preliminary CO case study evidence:
Marketing Profit Margin Percentiles, Direct Channels

![Bar chart showing profit margin percentiles for different channels.](chart.png)

- **Direct (n=101)**:
  - 25th Percentile: 6.43%
  - Median: 61.79%
  - 75th Percentile: 76.13%

- **CSA (n=26)**:
  - 25th Percentile: 76.13%
  - Median: 79.75%
  - 75th Percentile: 82.75%

- **FM (n=43)**:
  - 25th Percentile: 70.97%
  - Median: 76.22%
  - 75th Percentile: 84.92%

- **FS (n=26)**:
  - 25th Percentile: 64.04%
  - Median: 69.90%
  - 75th Percentile: 76.22%

---

**LocalFoodEconomics.com**
USDA AMS sample of Local Food Producers, Farmers and Ranchers, 2013

- 2013 Phase III ARMS data
- Nationally representative survey that targets about 30,000 farms, providing annual, national-level data on farm business

The Role of Labor and Other Variable Expenses

Source: Bauman, Thilmany, Jablonski 2018
Methodology: Profitability implications of local food marketing strategies

• We divide the sample into quartiles, segmented by profitability
  • Profitability is defined as return on assets.
  • A % representing the net income made per dollar of assets invested in a farm, common competitive returns for industry are 10-15%
  • For segments: Quartile 4-best performers, Quartile 1-lowest performers

• Provides benchmark information for comparisons across groups and time (as more years become available)

Profitability by Scale and Channel

Source: Bauman, Thilmany, Jablonski 2018
Profitability by Scale and Channel

Return on Assets by Quartile (Quartile 4 is the most profitable)

By Market Channel

Source: Bauman, Thilmany, Jablonski 2018

Regional Economic Development
Food Systems led economic development is an opportunity to strengthen rural-urban linkages

Denver Mayor Michael Hancock set the city’s 2020 sustainability goals:

Acquiring at least 25 percent of food purchases through Denver’s municipal government supply chain from sources produced entirely within Colorado.

<table>
<thead>
<tr>
<th>2012</th>
<th>2007</th>
<th>% change</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of Farms</td>
<td>10</td>
<td>24</td>
</tr>
<tr>
<td>Land in Farms</td>
<td>143 acres</td>
<td>609 acres</td>
</tr>
<tr>
<td>Average Size of Farm</td>
<td>14 acres</td>
<td>25 acres</td>
</tr>
<tr>
<td>Market Value of Products Sold</td>
<td>(D)</td>
<td>$561,000</td>
</tr>
<tr>
<td>Crop Sales (D)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Livestock Sales (D)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Average Per Farm</td>
<td>(D)</td>
<td>$23,356</td>
</tr>
</tbody>
</table>

Wage rate for local food producers, U.S.

Key takeaways

- Average wages are slightly higher in metro areas ($26 vs. $23 and $21 in metro-adjacent and nonmetro, respectively), there are no significant differences.
- Given the substantial literature that focuses on persistent wage gaps between rural and urban places (e.g., Marré 2017; Young 2013), this finding is unexpected.
- Shows potential for those who see local food systems as one strategy for rural economic development.

Source: Jablonski, Bauman, and Thilmany under review
Regional Economic Impacts of Local Food System Investments Generally Demonstrate Relatively Small, Short-Term Gains

- Impacts on employment, output, labor income

- Spatial econometric models
  - Deller et al. 2014; Brown et al. 2014

Words of caution in thinking about economic impacts

- Finite resources (e.g., land, consumers dollars, public dollars) so every decision involves a choice.

- Incorporated into economic impact assessments by estimating the net rather than the gross impact of changes in a local/regional food system.

- Can be on supply (production) or demand (consumer) side, or both.
Competition for Vendors at Farmers Markets

Arable land is likely already in production!

Study from Midwest estimates county-level fresh fruit and vegetable production potentials and expected sales based on current population.

– Corn and soybean are the dominant crops in these states, and net impacts would occur from shifts to fruit and vegetable.
– Land needed to satisfy regional fruit and vegetable demand is small, production consequences would be nominal.
Example Economic Impact Assessment Food Hub

- Surveyed 305 of Regional Access’ customers
  - 49% purchased less from other sources due to purchases from RA
  - Average reduction >23%
- Opportunity Cost associated with $1 increase in final demand for food hub sector ~ $0.11
- Reduced Total Output Multiplier from 1.82 to 1.63 (>10%)

Source: Jablonski, Schmit, and Kay 2016

Other Economic Impacts

- Businesses near farmers’ markets reported higher sales on market days
  - Additional sales found to directly support the businesses themselves, but also generated extra tax revenue for the communities in which the markets were located.
- Farmers’ markets increase property values in the market district
Evaluating long-term economic impacts more difficult, but potentially where more important impacts lie!

- Farmers’ markets as **business incubators** by providing the infrastructure necessary to build skills and gain business experience.

- Regular interactions can generate and circulate **knowledge** that vendors might use to develop new products and creative ways of marketing them.

- Sales income may be less important than the **skills and business experience** developed through participation in farmers’ markets.

---

**Example: Human Capital**

- 75% of farms made (or intend to make) changes to their farm business (ideas for a new product and/or marketing technique) based on these ideas.

- 45% of farms made these changes to product sold in both rural and urban markets.

- 82% reported that they shared ideas (or intend to) that they got through Greenmarkets with farmers in their home communities.

Source: Schmit, Jablonksi, Christensen, Kay, and Minner 2017
Integrating Community and Modeling Efforts to Evaluate Impacts and Tradeoffs of Food System Interventions

Can urban food policies, programs, and initiatives support farmers, ranchers, rural communities and economies?

Focus on rural-urban linkages!
Ongoing food policy/programming efforts in CO

- Newly funded grant, including 5 public health agencies (Adams, Arapahoe, Denver, Douglas, and Jefferson Counties). Primary goal is to implement food system policies that increase equitable access to healthy, affordable foods.

- City/county effort that involved substantial community outreach. Resulted in an evolving policy docket for the Council, and the Denver Food Action Plan 2020, which should be approved by the mayor shortly.

- 250 acres of redeveloped land that will support Denver’s global standing as a world-class hub for agriculture and innovation.

- State-wide effort that included community and industry engagement effort. Identifies action items to support key food system opportunities.
Ongoing food policy/programming efforts in CO

Example initiatives include:

• Healthy food in public facilities
  • Reduction and/or elimination of sales of ‘unhealthy’ items in public facilities and vending e.g., concessions in rec centers, the zoo, libraries, cafeterias in jails, the National Western Center.

• Food System Infrastructure
  • Develop and enhance regional food system infrastructure, including aggregation and storage facilities, commercial kitchens, food retail locations, and public market spaces to better support Denver food-based businesses and strengthen connections between businesses and Colorado farms and ranches.

• Promotion of an innovative food culture
  • Actively encourage efforts to promote Denver as a regional ‘food destination’ through efforts such as supporting high-performing food businesses and public relations campaigns.

Focus on 4 rural communities in collaboration with key industry/commodity partners
Rural Wealth Creation: Exploring Interactions Between Food Systems and Community Development

As urban consumers become more interested in their food and where it comes from, communities are increasingly integrating food into mainstream planning and policymaking. One of the common innovations is the use of Food Policy Councils, groups which bring together diverse industry, government, and non-profit partners to address challenges in the food supply chain, and to capitalize on new knowledge and expertise.

While the councils help to educate urban citizens and provide a place for innovation, they often do not include membership from rural populations—the people who grow and raise most of the food. An opportunity exists in this space to better understand how urban policies can support urban communities, while also providing opportunities for their rural providers. This is the goal of the CSU food system program.

Northern Colorado provides an exciting venue to investigate the challenges of urban and rural food co-development. In October 2017, the City and County of Denver released its Denver Food Vision, a program facilitated by the Denver Sustainable Food Policy Council. The program represents the City and the County’s first ever long-term strategic plan for food, and incorporates 10 achievable goals under pillars of Inclusivity, Health, Vibrancy, and Resilience. Colorado State University’s food research system team plans to use this innovative new program as a case study to develop a framework, models, and tools that will aid in the understanding of how urban food policy works. The team will study the impacts of this integrated food policy plan on rural-urban, political, cultural, physical, financial, natural, and human issues—and will focus especially on evaluating the inevitable trade-offs that will occur.

The goal of this research is to use observations and data to provide cities, regions, and communities with decisions around food-systems community development. The resulting tools will focus on supporting urban and rural-urban lines, allowing for partnerships and educations for city-dwellers and rural communities alike.
In 2014, the U.S. Department of Agriculture Agricultural Marketing Service convened a team of regional economists and food system specialists to develop a best practice Toolkit for evaluating the economic impacts of local food system activities. The team, coordinated by Dr. Dawn Theleny Meadah of Colorado State University, hopes that this Toolkit can guide and enhance the capacity of local organizations to make more deliberate and flexible assessments of local and small-scale economic activity and other ancillary benefits.

The Toolkit is made up of seven modules that can be grouped into two stages of food system planning, assessment and evaluation. The first set of modules (1-4) guides the first stages of an economic impact assessment and includes framing the system, relevant economic activities and assessment process as well as collecting and analyzing relevant primary and secondary data. The second set of modules (5-7) provides a more technical set of practicals and discussion of how to use the information collected in stage one to conduct a more rigorous economic impact analysis.