

# Food Systems Linkages to Rural Economic Development

Becca Jablonski

Assistant Professor & Food Systems Extension Economist  
Colorado State University



Innovations in the Food System: Shaping the Future of Food

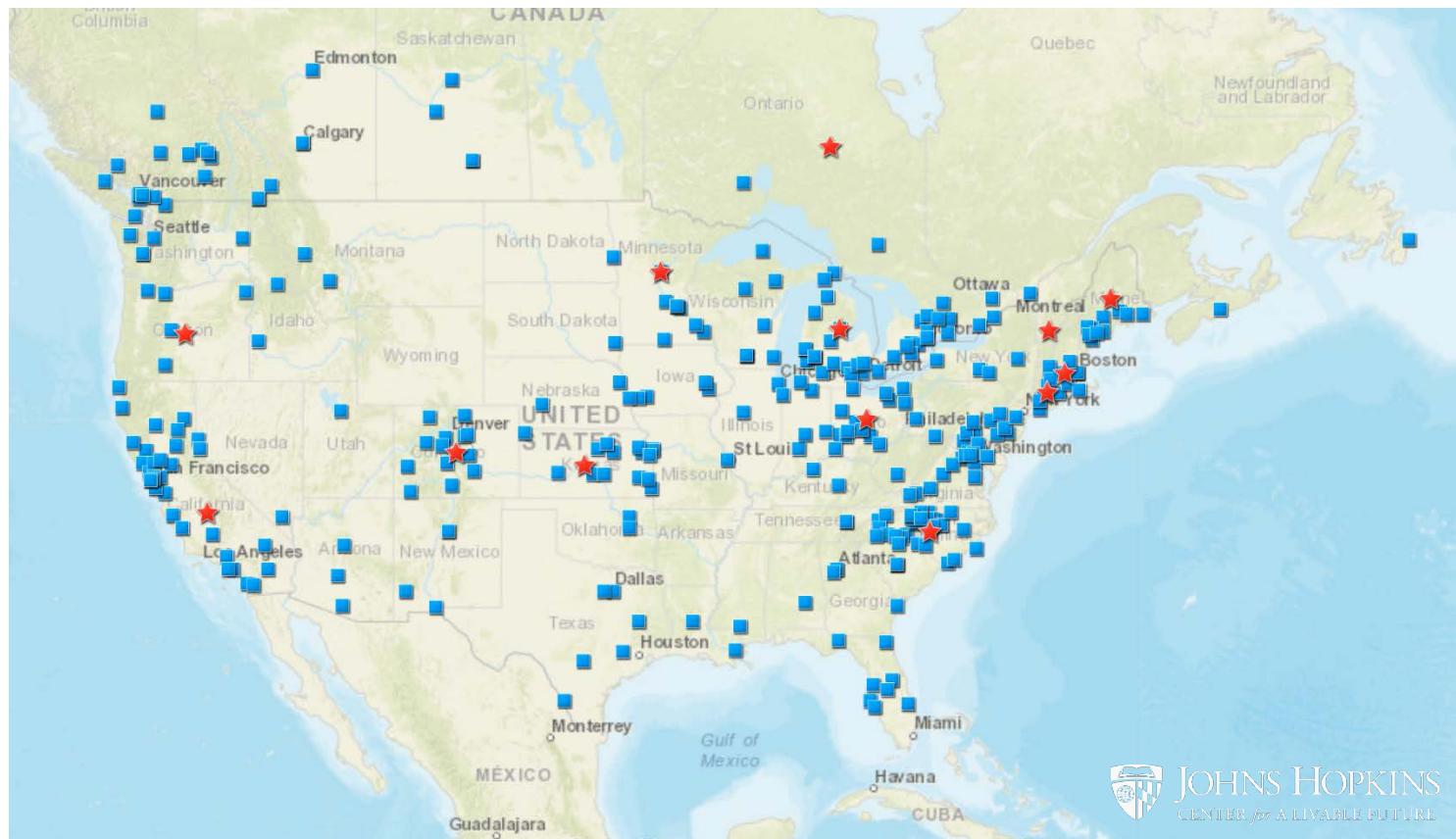
Food Forum Workshop | National Academies of Sciences, Engineering, and Medicine

August 7, 2019



# Opportunity: Leveraging Municipal Procurement

## Food Policy Networks Map, North America

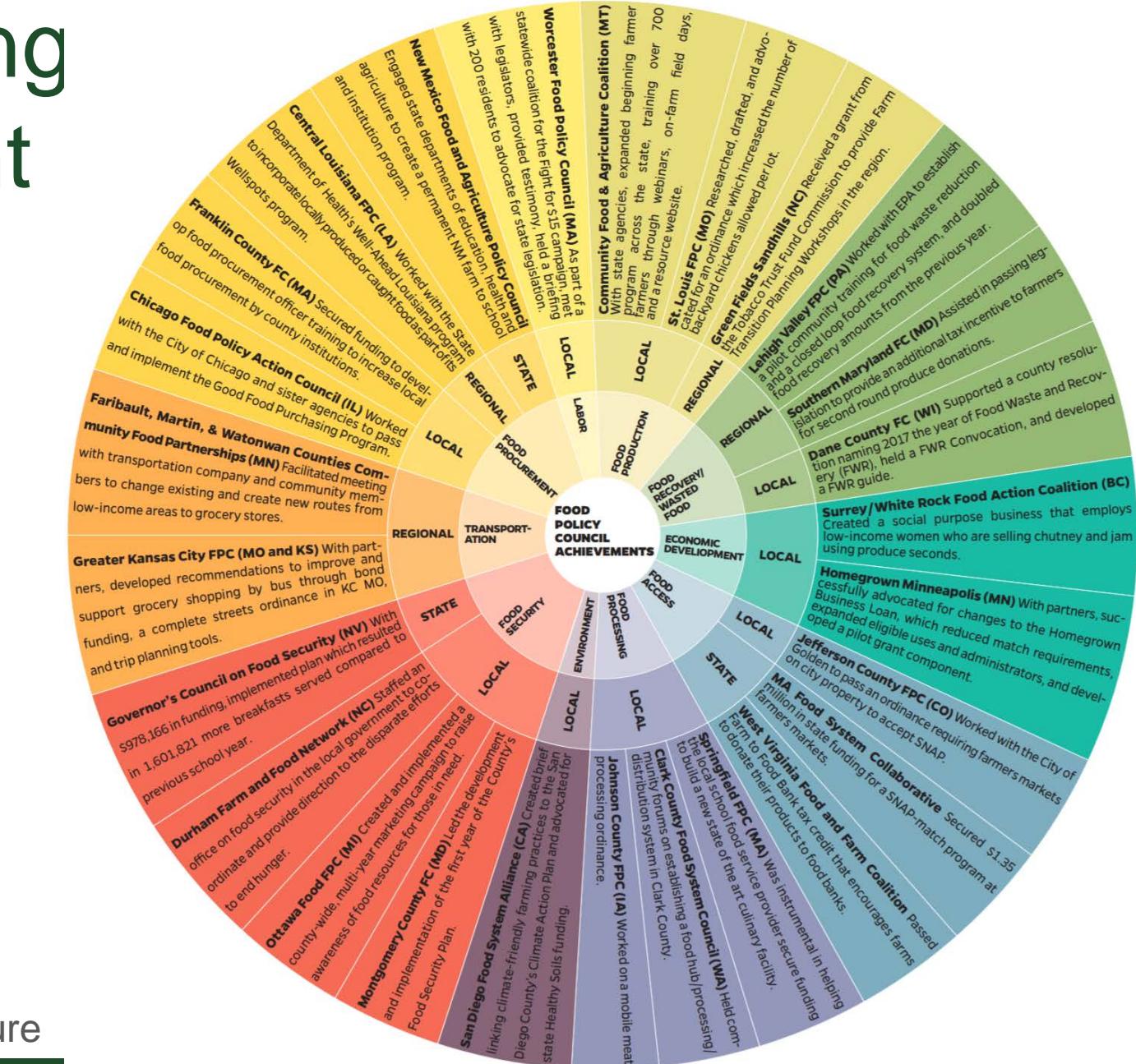


Source: Johns Hopkins Center for a Livable Future, 2019

- In 2016, over 300 active Food Policy Councils (Sussman and Bassarab 2017)
- 52 Food Policy Councils published food plans between 2010 and 2017.



# Opportunity: Leveraging Municipal Procurement



Source: Johns Hopkins Center for a Livable Future

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Source: Johns Hopkins Center for a Livable Future

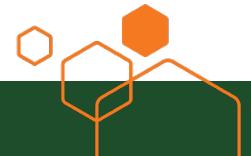
# Opportunity: Leveraging Municipal Procurement



Source: Johns Hopkins Center for a Livable Future

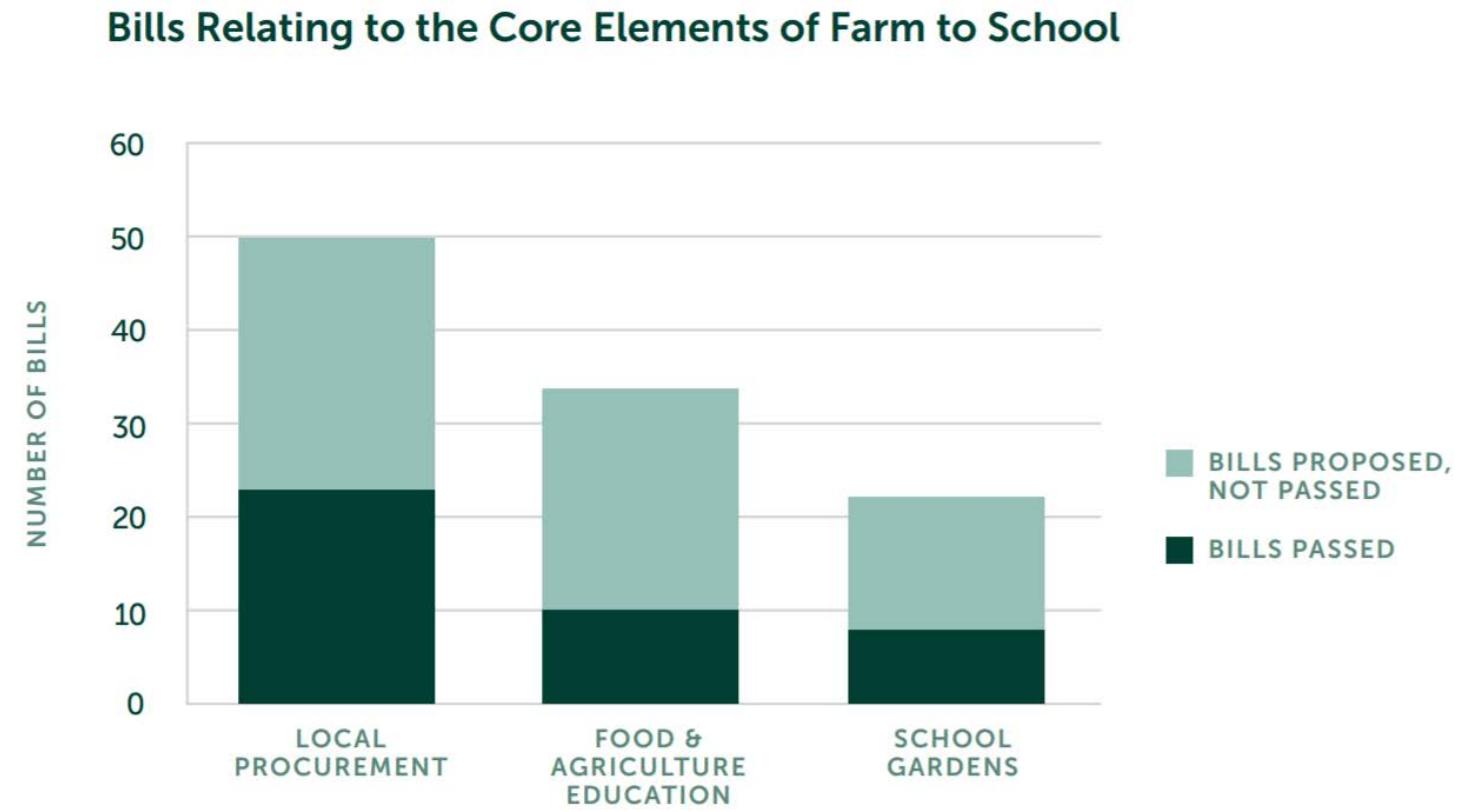
# Opportunity: Leveraging National School Lunch Program to Create Value Added Markets for U.S. Producers

- Over 100,000 schools across the U.S.
- 30.5 million students
- \$12.99 billion in the National School Lunch Program

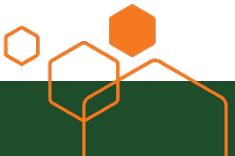


# Opportunity: Leveraging National School Lunch Program to Create Value Added Markets for U.S. Producers

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Source: National Farm to School Network 2019.

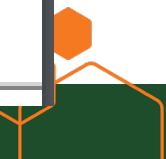


# Opportunity: Denver's Food Procurement



## 2030 WINNABLE FOOD GOALS

- Increase size of the Denver food economy by \$500M (from \$6.9-7.4B per year)
- Attract \$100M of new capital to Denver food businesses
- 25% of all food purchased by public institutions come from Colorado



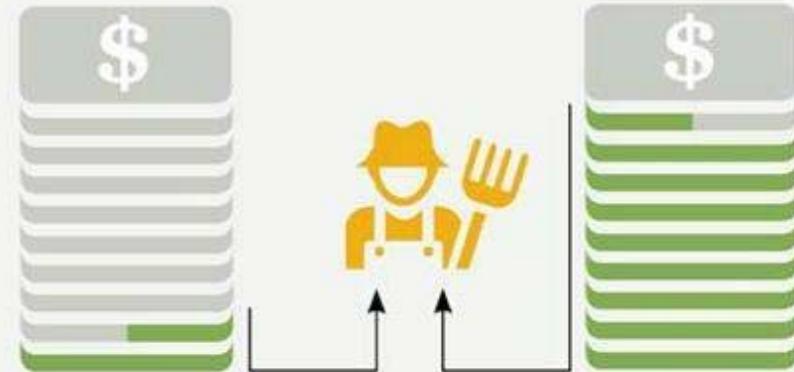
# Opportunity: Denver's Food Procurement

	Total Spend	Local Spend
Denver County Jail	\$ 3.5 M	\$1.5 M
Boulder Valley School District	\$ 3.5 M	
Denver Public Schools	\$ 20.0 M	\$4.0 M
Greeley-Evans Weld 6	\$ 4.0 M	\$0.8 M
University of Denver	\$ 3.3 M	
Regis	\$ 1.7 M	\$ 200 k
Children's Hospital	\$ 3.5 M	\$ 100 k
Longmont United		
Centura (SAH, OrthoColorado)	\$ 1.4 M	\$ 70 k
	<b>\$ 40.9 M/year</b>	<b>\$ 6.7 M/year</b>

<https://www.denvergov.org/foodplan>



## 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.

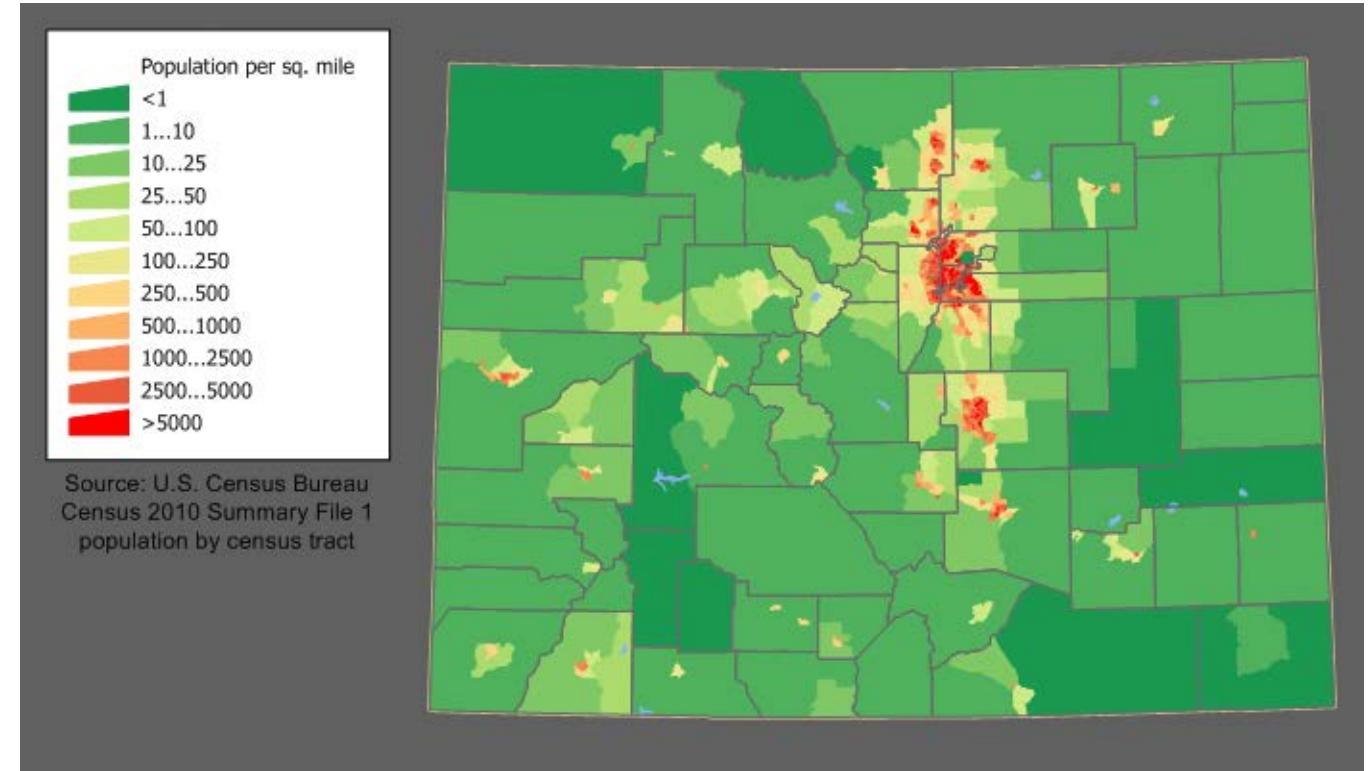


For every \$10 spent at a farmers market, studies show that as much as **\$7.80 is re-spent in your community**, supporting local jobs and businesses.



So...lots of purported opportunity, but does is there evidence that farmers, ranchers, and rural communities and economies benefit?

# Food systems development strategies involve rural-urban linkages



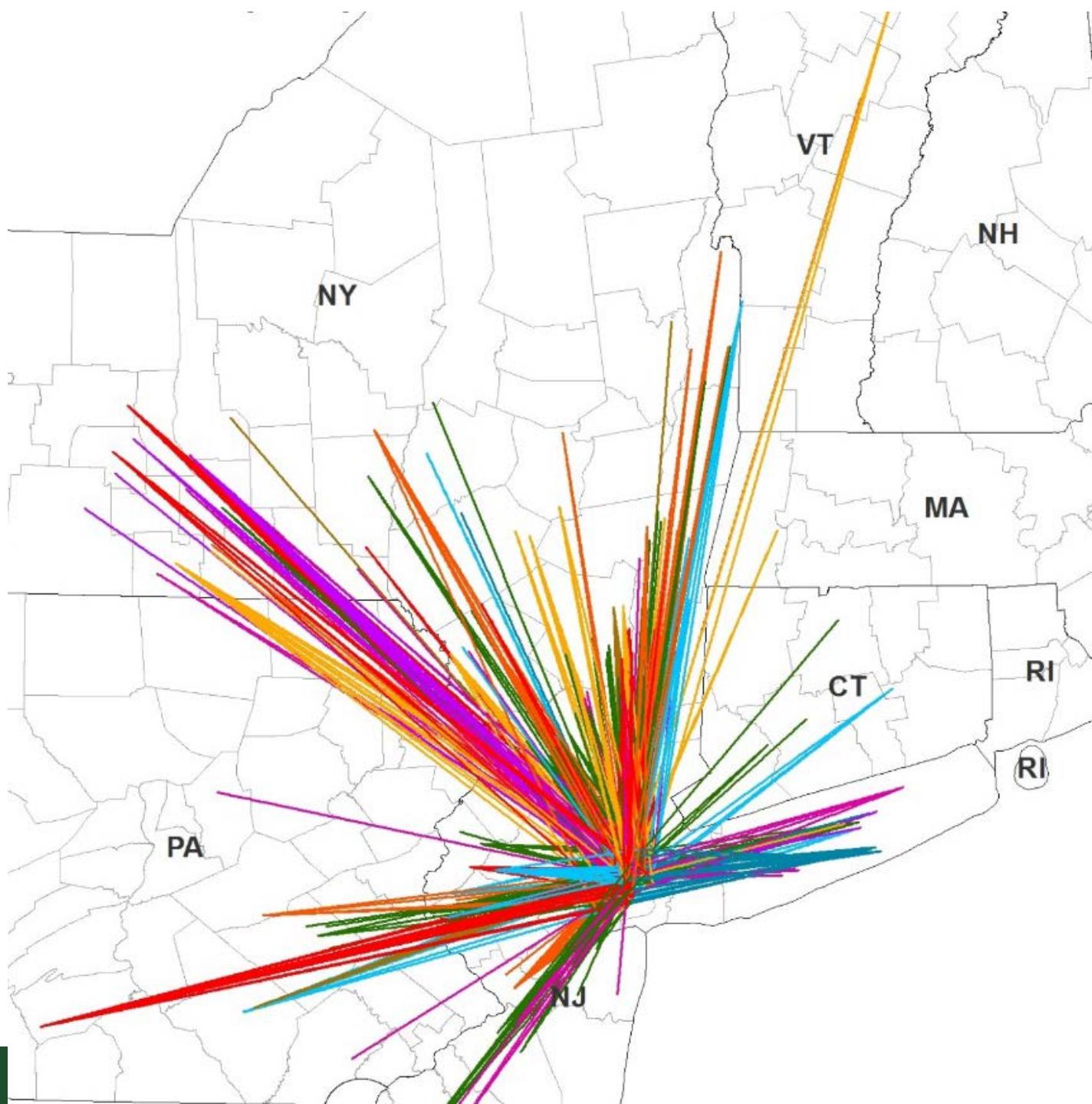
According to the 2017 Census of Agriculture, Denver County has 12 farms.

- 3 were <\$1,000 in sales
- 5 were between \$1,000-\$2,499
- 1 was between \$10,000-\$19,999
- 2 were between \$50,000-\$99,999



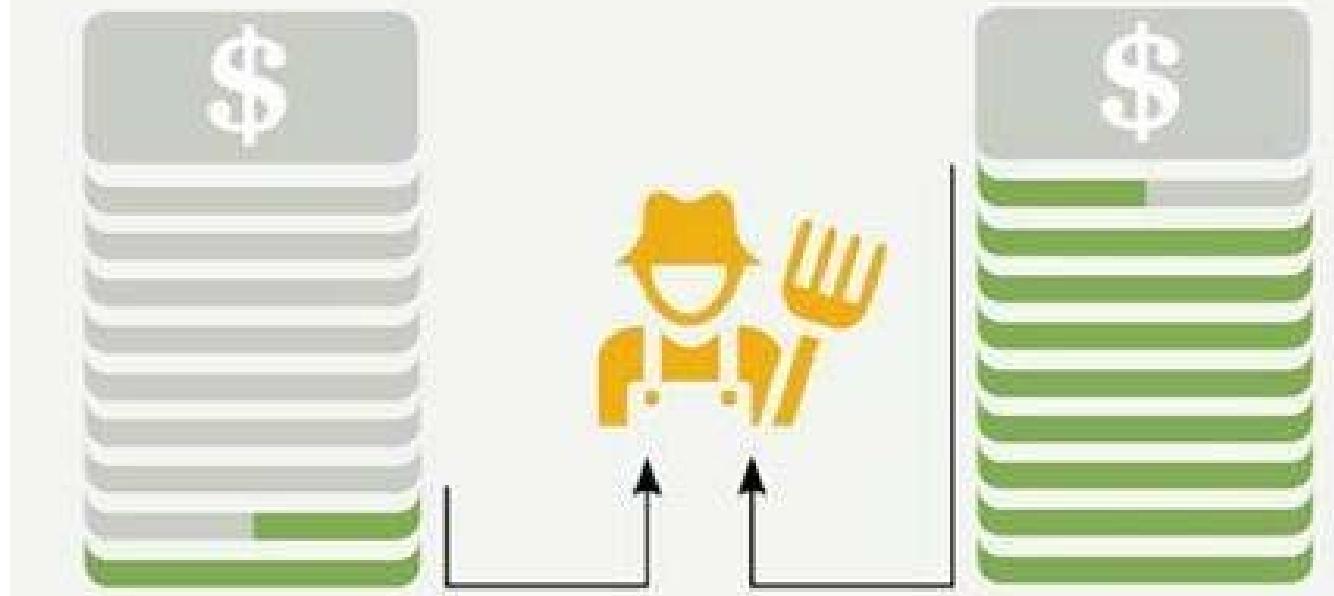
# Food systems development strategies involve rural-urban linkages

Source: Schmit, T.M., B.B.R. Jablonski, J. Minner, D. Kay, and L. Christensen. 2017. Rural wealth creation of intellectual capital from urban local food system initiatives: developing indicators to assess change. *Journal of Community Development*. 48(5): 639-656.





## ① Farmers win.

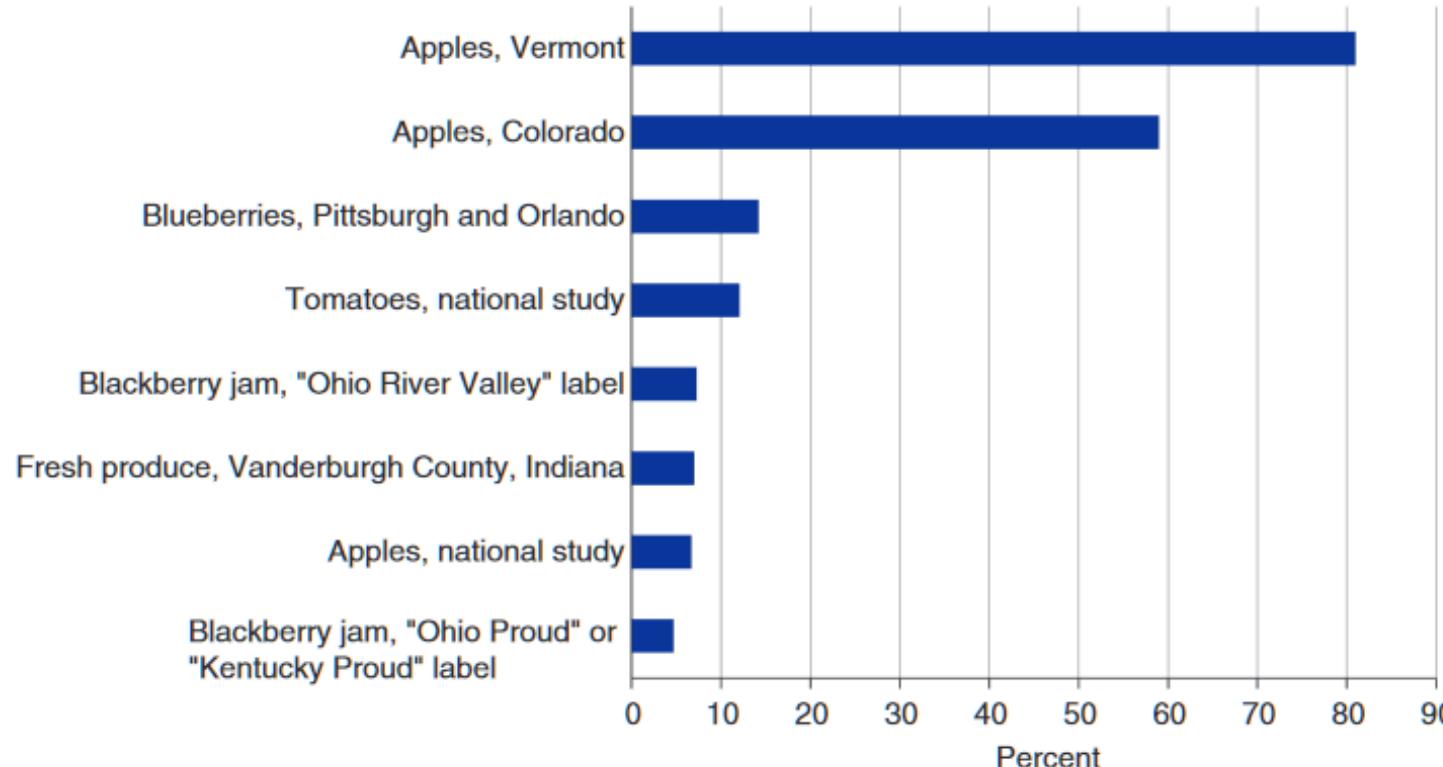


In general, farmers and ranchers only receive \$1.55 of \$10 spent on food. The rest goes to marketers, processors, wholesalers, distributors and retailers.

For every \$10 spent on local food, farmers get closer to \$8-9.

# Documented consumer willingness to pay a premium for local food

Willingness to pay for local food (percent premium)



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 Costanigro et al., 2011. Blueberries from Shi et al., 2013. Tomatoes/national and Apples/national from Onozaka and Thilmany, 2012. Blackberry jam from Hu et al., 2012. Fresh produce/Vanderburgh County from Burnett et al., 2011.

Source: Low, S.A., A. Adalja, E. Beaulieu, N. Key, S. Martinez, A. Melton, A. Perez, K. Ralston, H. Stewart, S. Suttles, S. Vogel, and B.B.R. Jablonski. 2015. Trends in U.S. Local and Regional Food Systems. U.S. Department of Agriculture, Economic Research Service. Administrative Publication Number 067.



**Matt LeRoux, Cornell Cooperative Extension of Tompkins County**



**BUILDING FARMERS**  
COLORADO STATE UNIVERSITY  
EXTENSION



# Market Channel Assessments



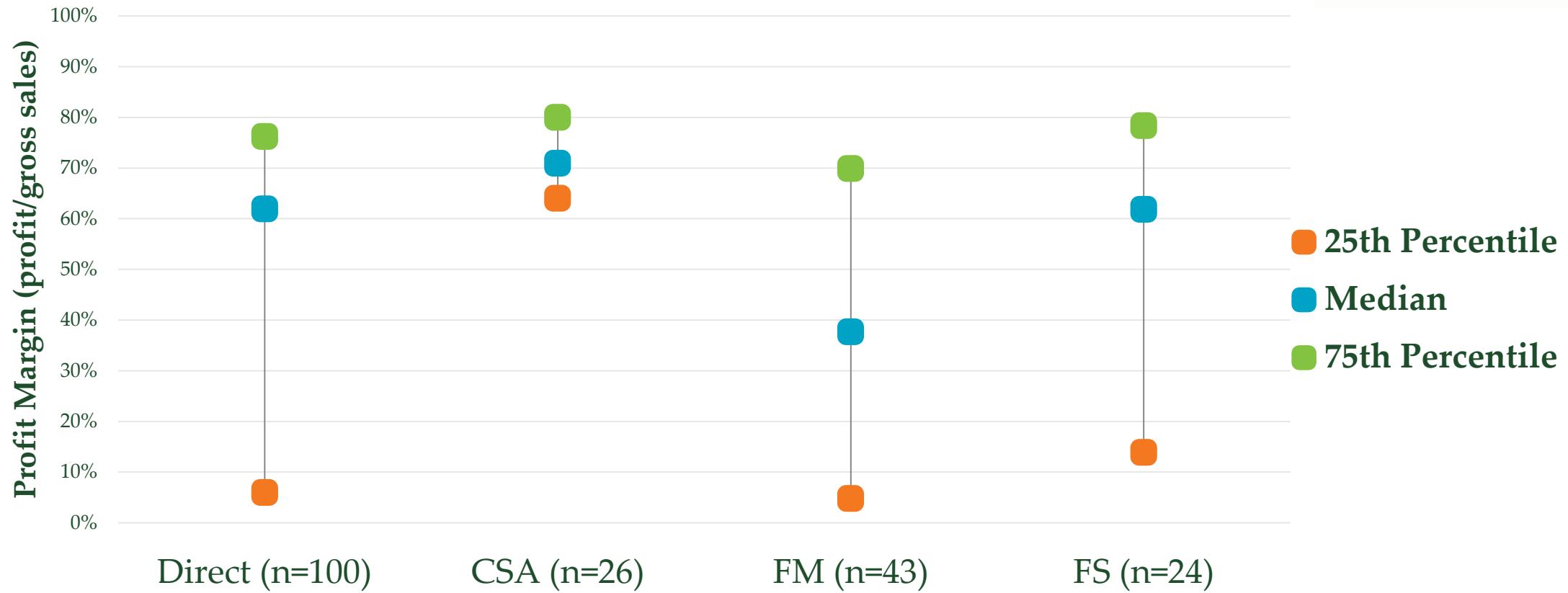
## How do you evaluate a market opportunity?

Six interacting factors impact the “performance” of a marketing channel including:



**Colorado Farmers Market Association**  
connecting farmers and consumers

# Marketing Profit Margin Percentiles, Colorado, Direct Channels



Source: Jablonski, B.B.R., M. Sullins, and D.T. McFadden. 2019. Community Supported Agriculture Marketing Performance: Results from Pilot Market Channel Assessments in Colorado. *Sustainability*.

Profit Margin =  $\frac{\text{Gross sales} - \text{Marketing Labor Cost} - \text{Travel Costs}}{\text{Gross sales}}$

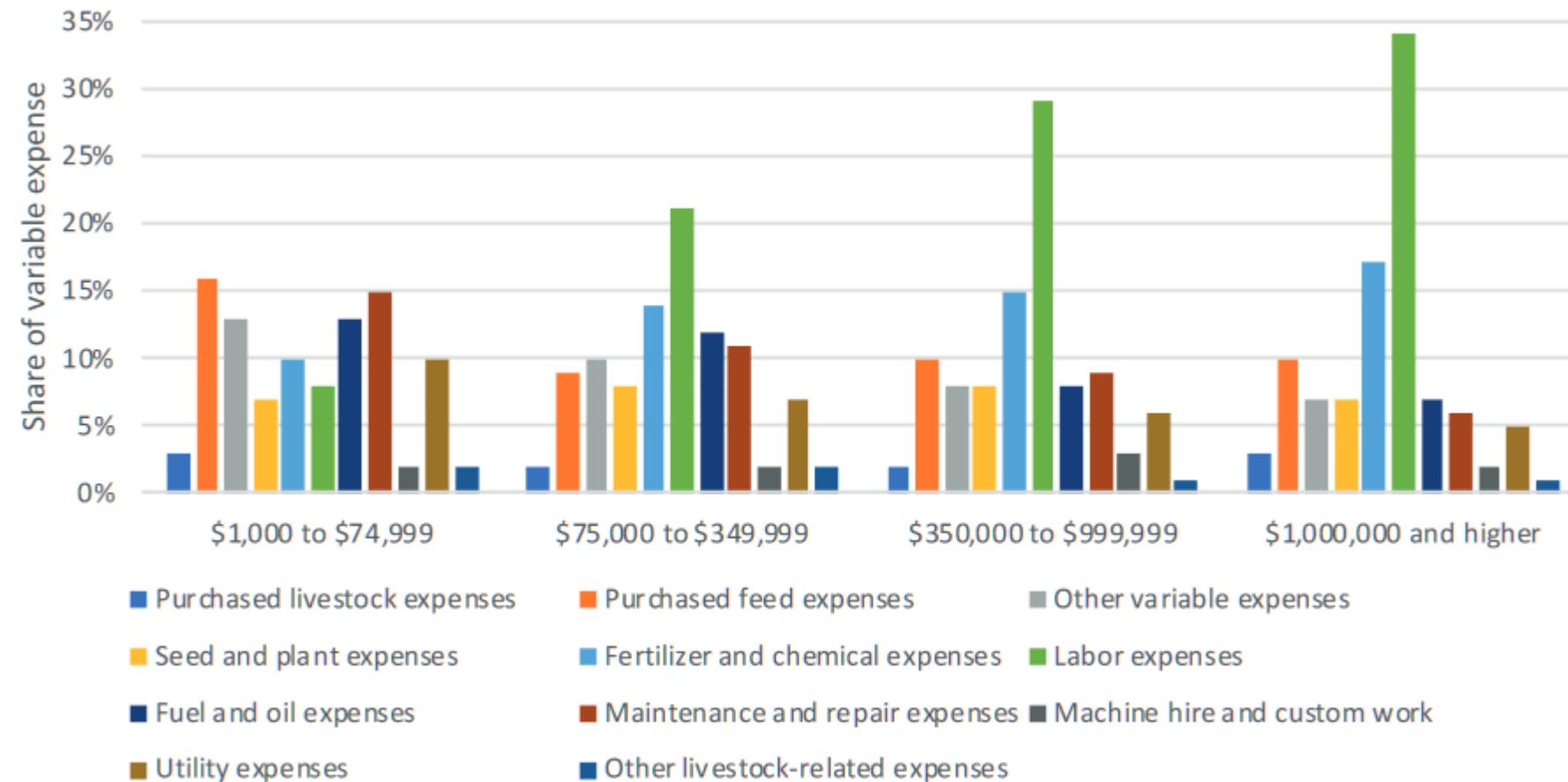
# National Data: USDA ARMS sample of Local Food Producers, Farmers and Ranchers, 2013

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

	No. of observations	Population size
<b>Market Channel</b>		
<b>D2C</b>	664	124,186
<b>Intermediated</b>	136	11,703
<b>D2CIntermediated</b>	213	24,012
<b>Alllocalfood</b>	1,013	159,901
<b>Nonlocalfood</b>	16,416	1,935,568
<b>Local food producers by farm scale (GCFI)</b>		
<b>1kto75k</b>	534	112,563
<b>75kto350k</b>	214	21,104
<b>350to1Million</b>	104	3,922
<b>Million and higher</b>	107	3,607

# The Role of Labor and Other Variable Expenses

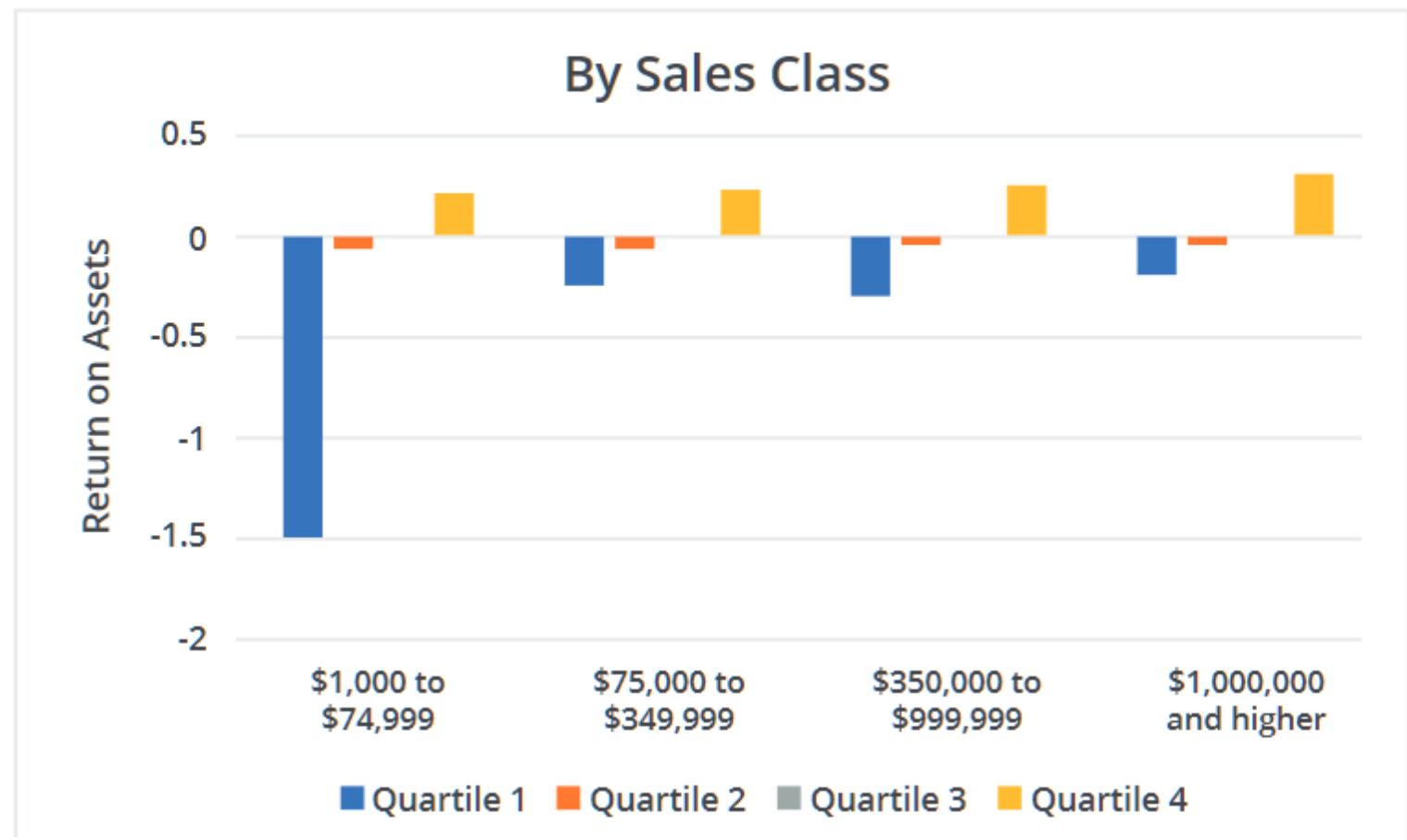
## Average Share of Variable Expenses for Local Producers by Scale, U.S.



Source: Bauman, A. G., D. Thilmany McFadden, and B.B.R. Jablonski. 2018. The financial performance implications of differential marketing strategies: Exploring farms that pursue local markets as a core competitive advantage. *Agricultural and Resource Economics Review*. 47(3):477-504.

# Profitability by Scale and Channel

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

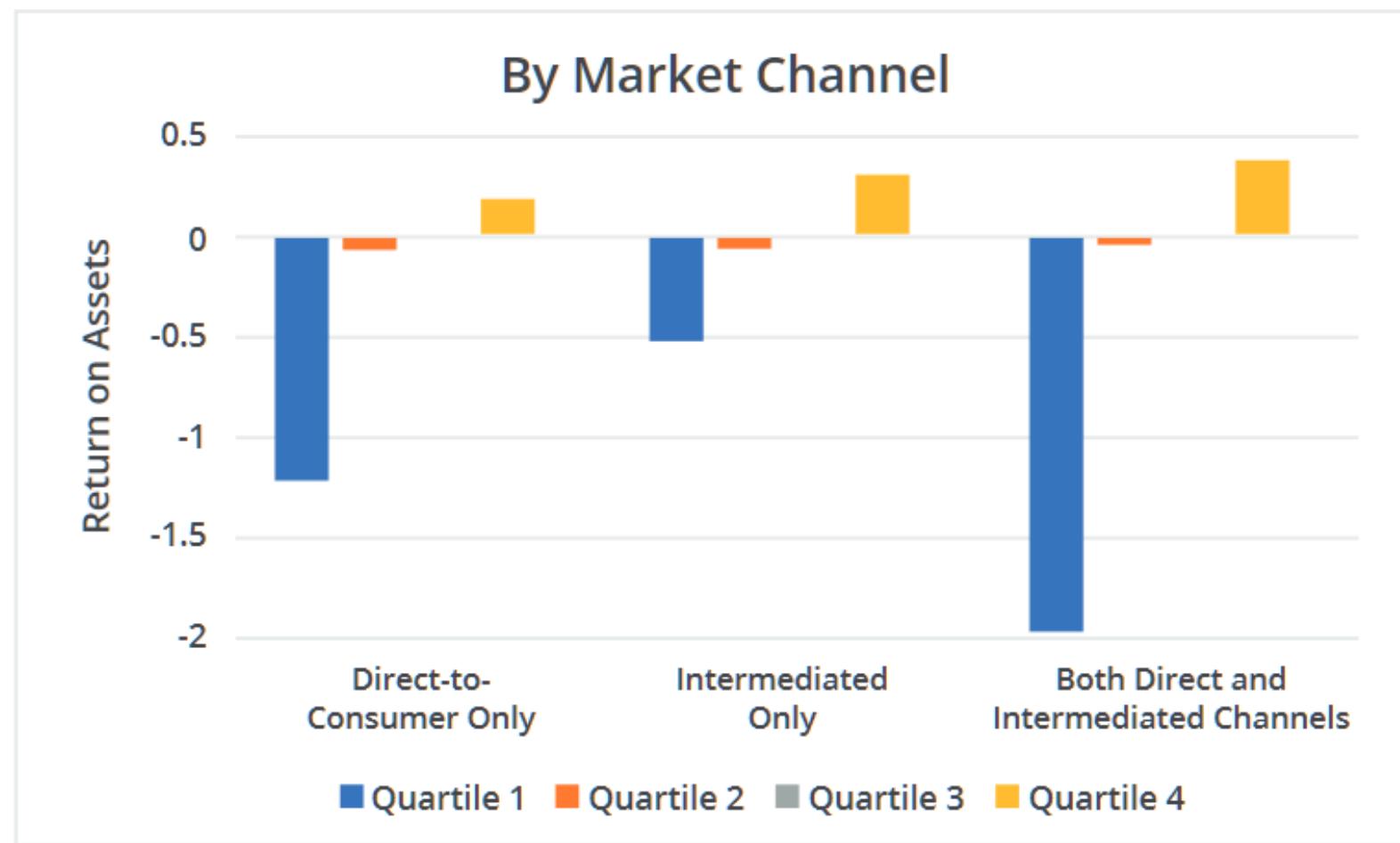


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# FACT SHEETS



## FINANCIAL PERFORMANCE IMPLICATIONS OF LOCAL FOOD ENTERPRISES

**LOCAL FOOD ECONOMICS FACT SHEET**  
**PROFITABILITY IMPLICATIONS OF LOCAL FOOD MARKETING STRATEGIES**

The intention of this work is to examine how local and market channels affect financial performance of local food enterprises. The analysis is based on a nationally representative survey of local food producers. At any point in time, a farm operation may be considering the trade-offs of their product marketing portfolio, balancing the efficiency gains of more efficient direct-to-consumer sales against the potential for more efficient and responsive ready-to-eat (e.g., farmers markets). This analysis evaluates the range of profitability at different combinations of scale and market channel available to local food producers.

**Focus on (Agriculture) Marketing Channels and by Gross Farm Income**

**Data and Approach**

We use data from the 2013 Phase II of AMES, a nationally representative survey of local food producers. We compare direct-to-consumer sales (market channels) to wholesale, intermediated channels. By comparing these two key market channels, we can compare those operations with relatively more (quarter 1) and better (quarter 4) financial performance. Key factors include labor costs, financial efficiency, sales volume, and market channel. We also examine the changing intensive nature of direct sales, we evaluate labor cost benchmarks, and how those change as scale increases. Since the cyclical nature of agriculture makes it particularly difficult to compare financial performances, we assess how farms that sell through local markets compare to others in terms of direct usage and financial efficiency.

**Figure 1: Average Total Variable Costs by Scale and Quartile**

Scale	Q1	Q2	Q3	Q4
\$1,000 to \$24,999	\$1,214	\$1,214	\$1,214	\$1,214
\$25,000 to \$49,999	\$1,214	\$1,214	\$1,214	\$1,214
\$50,000 and higher	\$1,214	\$1,214	\$1,214	\$1,214

Producers can be profitable at all combinations of scale and market channel. - For producers selling direct-to-consumer only, the highest performing small food producers outperformed the highest performing mid- and large-scale producers. - Scale does matter in the choice of appropriate marketing strategies and the portfolio of channels, as well as the most profitable.

**For more information: David Threinen • Cornell University • (607) 255-5122 • [www.localfoodeconomics.org](http://www.localfoodeconomics.org)**

**LOCAL FOOD ECONOMICS FACT SHEET**  
**FINANCIAL BENCHMARKS FOR LOCAL FOOD PRODUCERS**

The intention of this work is to explore the financial implications the providers participating in direct-to-consumer and intermediated market channels. By comparing these two key market channels, we can compare those operations with relatively more (quarter 1) and better (quarter 4) financial performance. Key factors include labor costs, financial efficiency, sales volume, and market channel. We also examine the changing intensive nature of direct sales, we evaluate labor cost benchmarks, and how those change as scale increases. Since the cyclical nature of agriculture makes it particularly difficult to compare financial performances, we assess how farms that sell through local markets compare to others in terms of direct usage and financial efficiency.

**Figure 2: Labor Share of Variable Costs by Scale and Quartile**

Scale	Q1	Q2	Q3	Q4
\$1,000 to \$24,999	0.12	0.12	0.12	0.12
\$25,000 to \$49,999	0.12	0.12	0.12	0.12
\$50,000 and higher	0.12	0.12	0.12	0.12

Producers can be profitable at all combinations of scale and market channel. - Labor investments are a relatively higher share of total costs as operations grow in scale. - For producers selling direct-to-consumer only, the highest performing small food producers outperformed the highest performing mid- and large-scale producers. - Scale does matter in the choice of appropriate marketing strategies and the portfolio of channels, as well as the most profitable.

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**THE ROLE OF LABOR AND OTHER VARIABLE EXPENSES IN LOCAL FOOD MARKETS**

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**Figure 3: Average Total Variable Expenses for All Direct and Local Food Producers U.S.**

Market Channel	Q1	Q2	Q3	Q4
Wholesale	\$1,214	\$1,214	\$1,214	\$1,214
Intermediated	\$1,214	\$1,214	\$1,214	\$1,214
Direct	\$1,214	\$1,214	\$1,214	\$1,214

Comparing with prior findings, farms selling local food sales have significantly larger average expenditures compared to local food participants selling direct-to-consumer only. On average, local food participants spend 8% of total expenditures on labor, compared to only 3% for farms that sell through local food channels.

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**LOCAL FOOD ECONOMICS FACT SHEET**  
**EVALUATING THE FINANCIAL EFFICIENCY OF LOCAL FOOD PRODUCERS**

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**Figure 4: Relationship of Total Variable Costs and Profit Efficiency**

The average estimated efficiency of local food producers is 47% implying that, on average, a farm can increase profits by about 12.7% by increasing efficiency. - Producers can sell higher profits using a different combination of fixed and variable inputs. - Overall, more direct market producers are not profiting on the efficiency frontier. This suggests that these producers are not responding to price changes in their operations.

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# Urban agriculture

## British Food Journal

Urban agriculture: connecting producers with consumers

Carolyn Dimitri, Lydia Oberholtzer, Andy Pressman,

### Article information:

To cite this document:

Carolyn Dimitri, Lydia Oberholtzer, Andy Pressman, (2016) "Urban agriculture: connecting producers with consumers", British Food Journal, Vol. 118 Issue: 3, pp.603-617, <https://doi.org/10.1108/BFJ-06-2015-0200>

- 2012 national survey of urban farmers (n=315)
  - 26% had mission statements focused on markets (others focused on community, education, and food security goals)
    - Social mission primary driver of most operations
  - 28% had a primary farmer earning a living from the farm.
  - “Urban farms face real problems...related to farm survivability and farmer livelihood”



## ② Your community wins.



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.

# Regional Economic Impacts of Local Food System Investments Generally Demonstrate Relatively Small, Short-Term Gains

- **Impacts on employment, output, labor income**
  - Gunter & Thilmany 2012; Hughes & Isengildina-Massa 2015; Hughes et al. 2008; Jablonski et al. 2016; Schmit et al. 2016; Swenson 2010
- **Spatial econometric models**
  - Deller et al. 2014; Brown et al. 2014

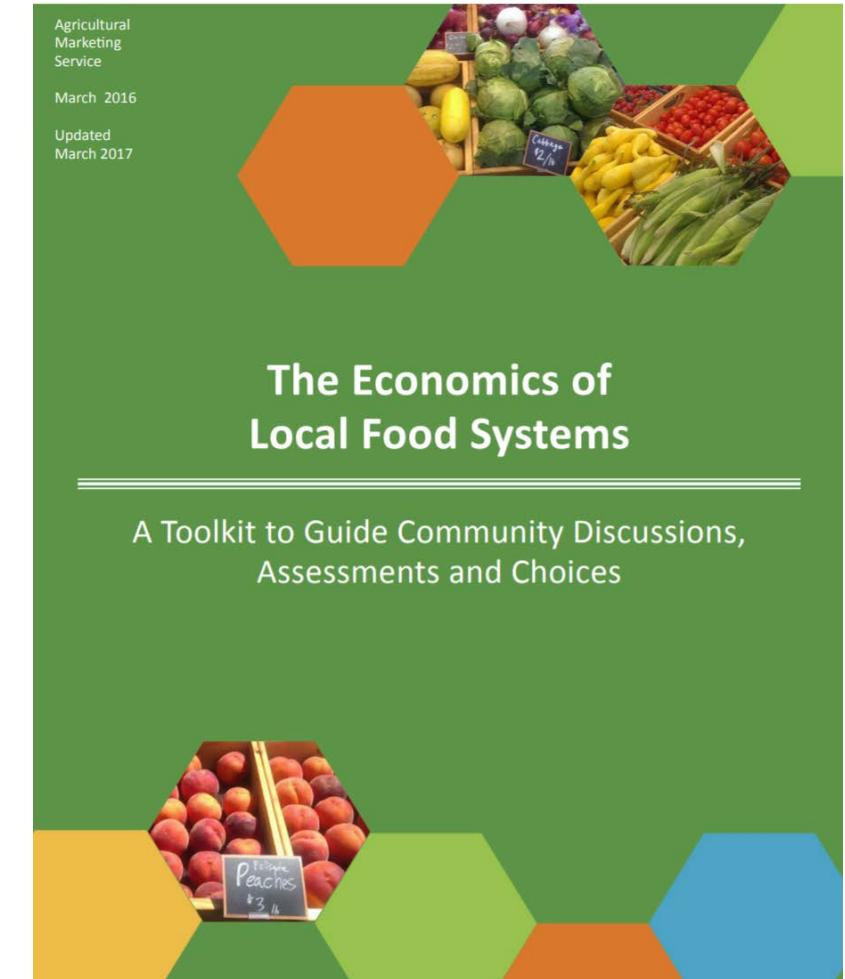


# Words of caution in thinking about community economic impacts

- Finite resources (e.g., land, consumers dollars, public dollars) so every decision involves a choice.
- Need to assess the **net** rather than the **gross** impact of changes in food system.
- Can be on supply (production) or demand (consumer) side, or both.



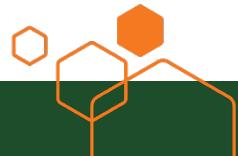
Agricultural  
Marketing  
Service  
March 2016  
Updated  
March 2017



# 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.

Source: Swenson, D. 2011. The Regional Economic Development Potential and Constraints to Local Foods Development in the Midwest. Iowa State University



# How do farmers respond to new market opportunities?

- Is new market increasing price point?  
Enabling producers to scale up?  
Creating a market for seconds?
- Can the intended producer respond to the market opportunity? Do they have the right food safety protocol in place?  
Do they have access to appropriate infrastructure?



Source: Niche Meat Processing Assistance Network



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.

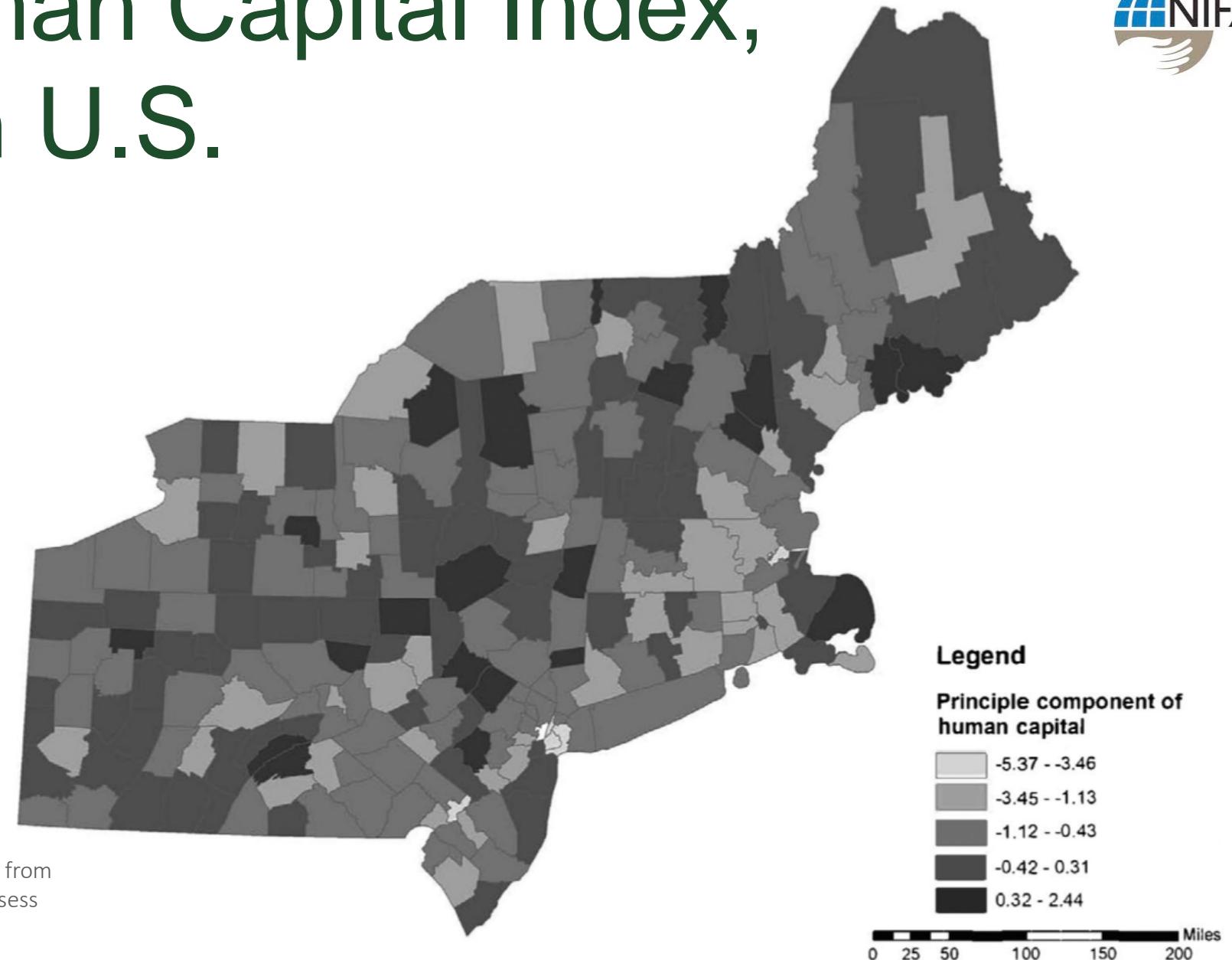


Source: Schmit, T.M., B.B.R. Jablonski, J. Minner, D. Kay, and L. Christensen. 2017. Rural wealth creation of intellectual capital from urban local food system initiatives: developing indicators to assess change. *Journal of Community Development*. 48(5): 639-656.

# Stock of Human Capital Index, Northeastern U.S.



\*Stocks of human capital significantly higher in counties with Greenmarket farmers



Source: Schmit, T.M., B.B.R. Jablonski, J. Minner, D. Kay, and L. Christensen. 2017. Rural wealth creation of intellectual capital from urban local food system initiatives: developing indicators to assess change. *Journal of Community Development*. 48(5): 639-656.

A photograph of a paved road stretching into the distance, flanked by green fields and hills under a clear blue sky. The words "MOVING FORWARD" are painted in large, white, serif capital letters across the center of the road.

MOVING  
FORWARD

IF we are going to leverage procurement opportunities, are the 'right' people at the table?

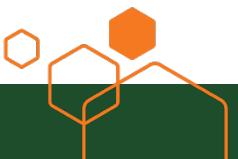


## OUR MEMBERS

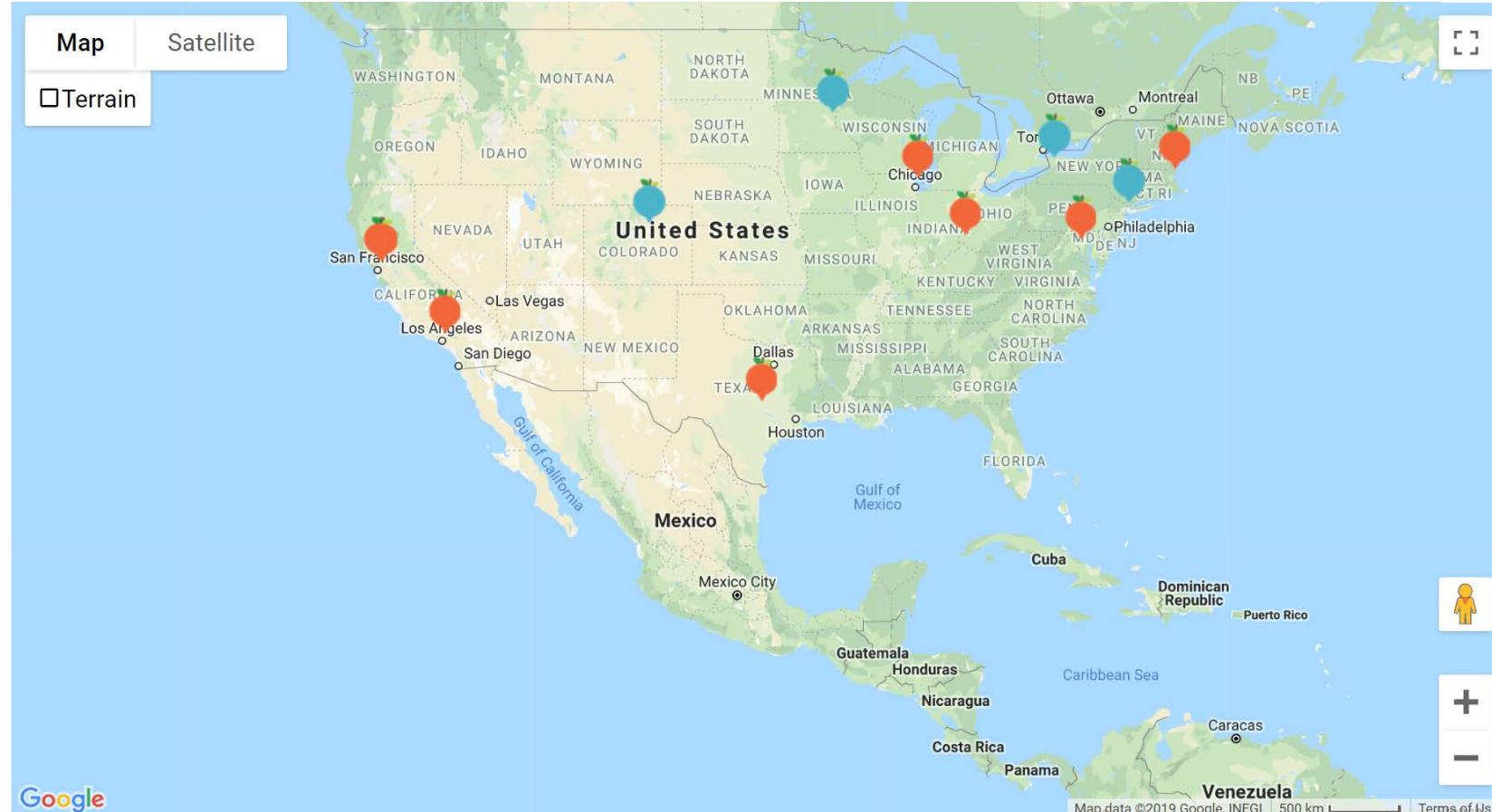
Meet the SFPC members.

# Denver Food Procurement Committee

- Denver Sustainable Food Policy Coalition
  - One of Denver's Mayor-appointed Boards and Commissions
  - Created the City Food Purchasing Standard Policy Working Group in 8/2017 (Resolution 007-2017)
  - Adopted Issue Brief for City Food Purchasing Standard 6/2018 (014-2018)
- In the Brief:
  - “Sustainable Food” is defined by the Good Food Purchasing Standards



# Good Food Purchasing Program



 = INSTITUTIONAL PARTICIPANTS

 = POLICY ADOPTIONS



# Good Food Purchasing Program



- Local Economies
- Environmental Sustainability
- Valued Workforce
- Nutrition
- Animal Welfare



FOOD SYSTEMS  
COLORADO STATE UNIVERSITY





# PLEASE JOIN US!

IN GUNNISON, COLORADO

For a convening of growers, buyers, and policymakers, to discuss how market opportunities in the Denver metro area can support the specialty crop industries in the San Luis Valley and Western Slope.



DECEMBER 9TH  
6PM

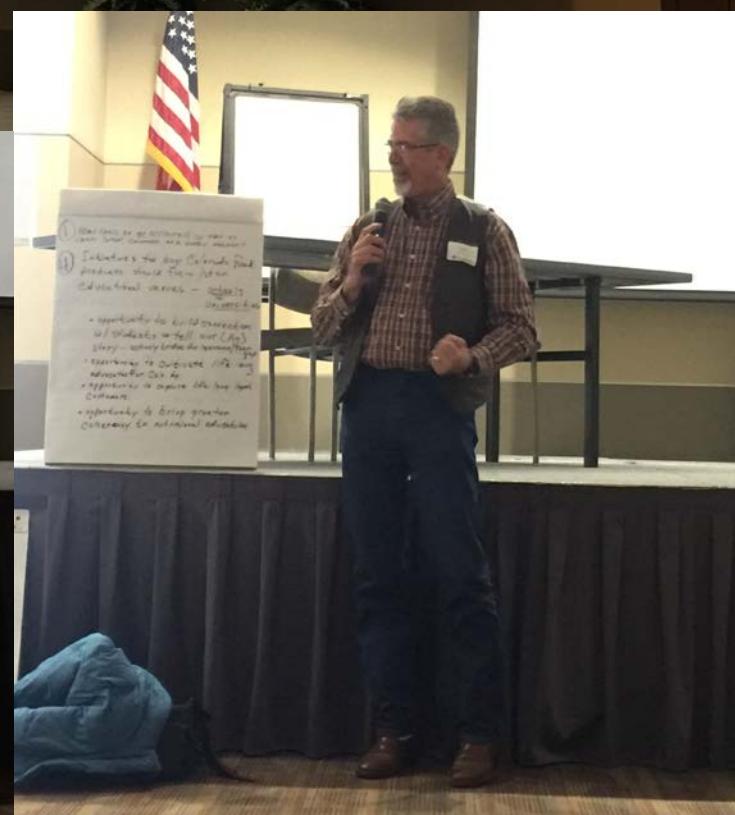
|| Dinner and Happy Hour ||  
High Alpine Brewing  
111 North Main Street

DECEMBER 10TH  
8:30AM-3:30PM

|| Market Opportunity Discussion ||  
Western State University  
South Ballroom



FOOD SYSTEMS  
COLORADO STATE UNIVERSITY





Steamboat Springs, CO  
December 17, 2018

Craig, CO  
February 27, 2019



Nunn, CO  
March 1, 2019

Fort Collins, CO  
April 4, 2019

# Producer Meetings



Gunnison, CO  
December 2018



San Luis Valley, CO  
February 5-7, 2019

# Scenario Analysis: Wheat

1. Colorado-source identified whole grain white wheat (snowmass)
  - Segregated grain elevators/distribution
2. Certified Organic, Colorado-grown wheat
3. Good Food Purchasing Program preference for 3<sup>rd</sup> party environmental stewardship certifications



December 15, 2015 | Press Releases, Organic Initiative 2015

## ARDENT MILLS TO HELP FARMERS DOUBLE U.S. ORGANIC WHEAT ACRES BY 2019

*Anticipating ongoing strong Demand for Organic Grain-based Products, Ardent Mills Takes Bold Action*





RURAL-URBAN  
CONNECTIONS

# COLORADO FOOD SUMMIT

ADVANCING FOOD POLICIES THAT SUPPORT URBAN-RURAL CONNECTIONS

TUESDAY, JANUARY 7TH, 2020  
DENVER MUSEUM OF NATURE AND SCIENCE



FFAR

Foundation for Food  
and Agriculture Research

## Our Partners

Colorado Beef Council  
Colorado Dairy Farms

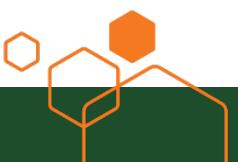
Colorado Department of Agriculture  
Colorado Department of Education  
Colorado Department of Human Service  
Colorado Department of Local Affairs

CO Department Public Health and Environment  
Colorado Farmers Market Association  
Colorado Food Systems Advisory Council  
CO Fruit and Vegetable Growers Association  
Colorado Pork Council

Colorado Potatoes Administrative Council  
Colorado State University Food Systems  
Cooking Matters

Denver Museum of Nature and Science  
Denver Public Health and Environment  
Denver Sustainable Food Policy Council  
Denver Urban Gardens

Farm Bureau  
LiveWell Colorado  
National Bison Association  
National Western Center  
National Young Farmers Coalition  
Rocky Mountain Farmers Union  
Western Colorado Horticultural Society



# For institutional procurement strategies to work, need to consider:

1. Are you creating markets that will work for the scale, commodity, etc. of producer at the table?



# Different business models will work for producers based on competitive advantage

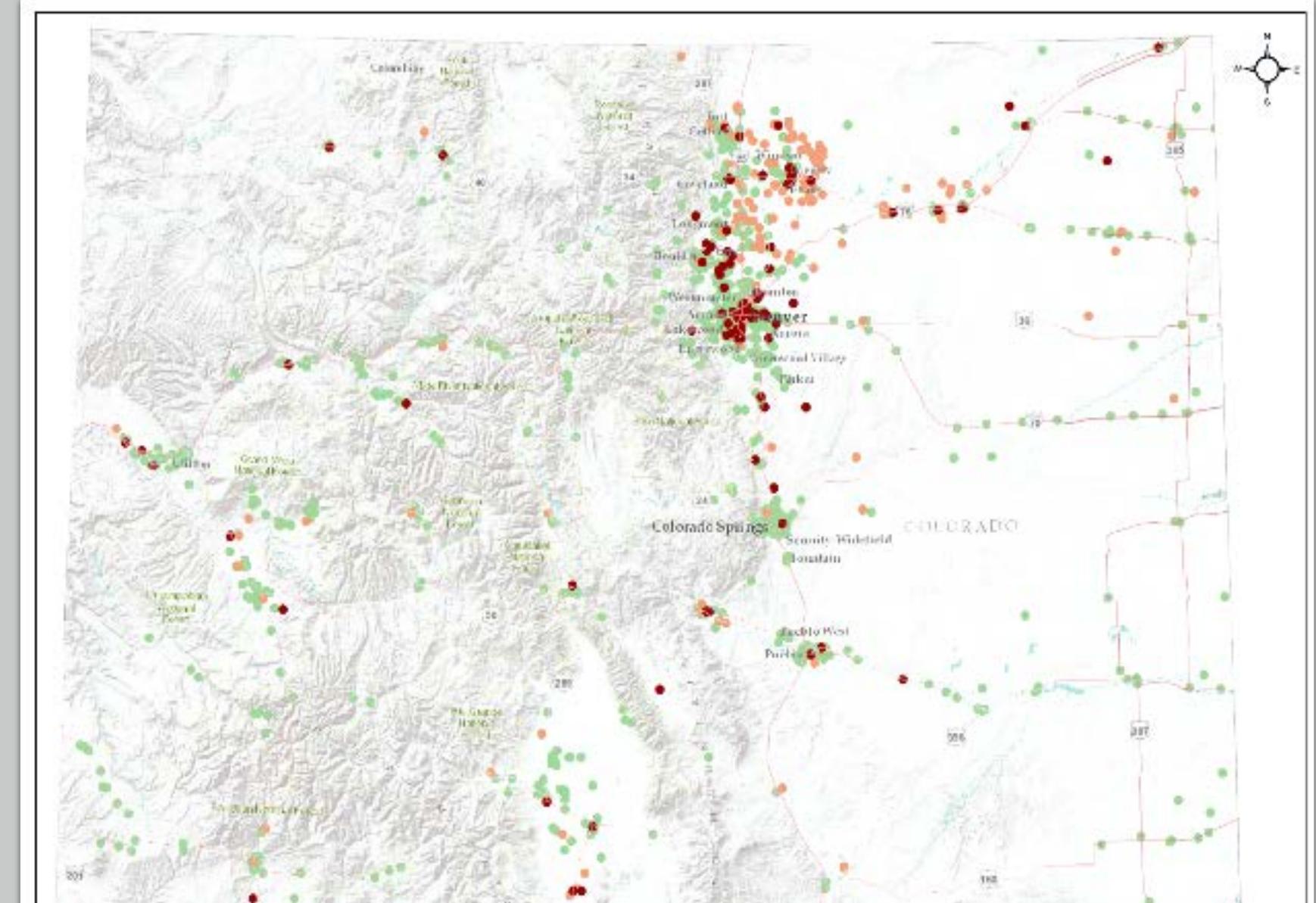


# For institutional procurement strategies to work, need to consider:

1. Are you creating markets that will work for the scale and commodity of producer at the table?
2. Is the right infrastructure in place?



Better to  
utilize  
underutilized  
assets  
**BEFORE**  
making new  
investments



Manufacturing facilities, Colorado, 2016

# For institutional procurement strategies to work, need to consider:

1. Are you creating markets that will work for the scale and commodity of producer at the table?
2. Is the right infrastructure in place?
3. Heterogeneity of products and processing systems makes things complex! (example: traceability with wheat)





## Becca Jablonski

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[Foodsystems.colostate.edu](http://Foodsystems.colostate.edu)

[Localfoodeconomics.com](http://Localfoodeconomics.com)