Evaluating Economic Impacts of Local and Regional Food Systems

IN-SERVICE TRAINING FOR GROWING FOOD CONNECTIONS
LAS CRUCES, NEW MEXICO

FEBRUARY 14, 2017

GROWING FOOD
CONNECTIONS

USDA
United States Department of Agriculture

U.S. DEPARTMENT OF AGRICULTURE
AMS
AGRICULTURAL MARKETING SERVICE

GROWING FOOD CONNECTIONS

Goal

Enhance community food security while ensuring sustainable and economically viable agriculture and food production

Approach

Increase local government capacity to strengthen community food systems through planning and public policy

RESEARCH   **POLICY & PRACTICE**   **EDUCATION**

Project Team

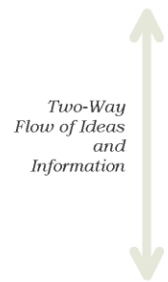and Partners

GROWING FOOD CONNECTIONS

Change happens when communities have the knowledge, resources and tools to grow connections between family farmers and underserved community residents.

Growing Food Connections aims to address the concerns of struggling family farmers and underserved community residents by building capacity of local governments and their partners to create, implement and sustain food system policies and plans that both promote food access and foster a healthy agricultural sector.

Farmers

Local and Regional Governments

Community Residents

LOCAL KNOWLEDGE

Two-Way Flow of Ideas and Information

COMMUNITIES of OPPORTUNITY

Identify the barriers these communities face and the capacities that exist to build towards successfully connecting family farmers to underserved community residents.

COMMUNITIES of INNOVATION

Evaluate policies, strategies, and partnerships that are working in these communities to reconnect family farmers to food insecure populations.

3 MAJOR ACTIVITIES

Researchers, educators, students, planners and community partners will work within the communities to understand the barriers and innovations to create and provide policy tools and training.

RESEARCH

Assess how local governments are using policy and planning tools to foster connections between family farmers and underserved community residents.

OUTCOMES
Local and regional governments adopt and enact plans/policies to connect farmers with consumers in food systems.

EDUCATION

Educate a new generation of students to continue the work of food systems planning in 10 partner universities across the U.S.

OUTCOMES
Universities train students in food systems policy and planning.

PLANNING & POLICY

Develop research-supported policy tools and training to help local governments develop and enact policies that reconnect underserved community residents with local and regional farmers.

OUTCOMES
Consumers, farmers and farm advocates participate and shape local government food policy.

TEAM & PARTNERS

The project will be guided by a National Advisory Committee with representation from diverse disciplines, regions and research backgrounds.

An interdisciplinary and multi-institutional team of researchers and practitioners to integrate research, education and extension to grow food connections across communities.

University at Buffalo, The State University of New York

American Farmland Trust

JOHN GLENN SCHOOL OF PUBLIC AFFAIRS

cultivating healthy places

APA — American Planning Association — Making Great Communities Happen

For more information, follow us: | growingfoodconnections.org | growingfoodconnections@ap.buffalo.edu

Collaborating with Eight County Governments

- Chautauqua County, NY
- Cumberland County, ME
- **Doña Ana County, NM**
- Dougherty County, GA
- Douglas County, NE
- **Luna County, NM**
- Polk County, NC
- Wyandotte County, KS

Steering Committee Vision and Goals

Doña Ana County

The Doña Ana region has a thriving and inclusive food system that:

1. Provides affordable and abundant healthy food for our families and communities;
2. Provides competitive financial return and esteem for our farmers, and generates sustainable employment and small business opportunities that promote a vibrant and equitable economy;
3. Protects and regenerates the health of our farmlands and natural resources.

Steering Committee Vision and Goals

Luna County

To enhance food security, safety, and awareness by ensuring sustainable and economically viable agriculture for Luna County. Luna County's goals include:

1. Revitalize, promote, and expand markets for small scale agriculture and food production.
2. Coordinate and provide information to emergency food providers to make sure the people who need services and resources get them.
3. Expand culinary and vocational education and training to establish food connections.

Goals for Workshop

- **Help you measure the economic impacts of local food investments;**

- **Share best practices, community case studies and applied research;**

- **Support rigorous assessments of food system activities;**

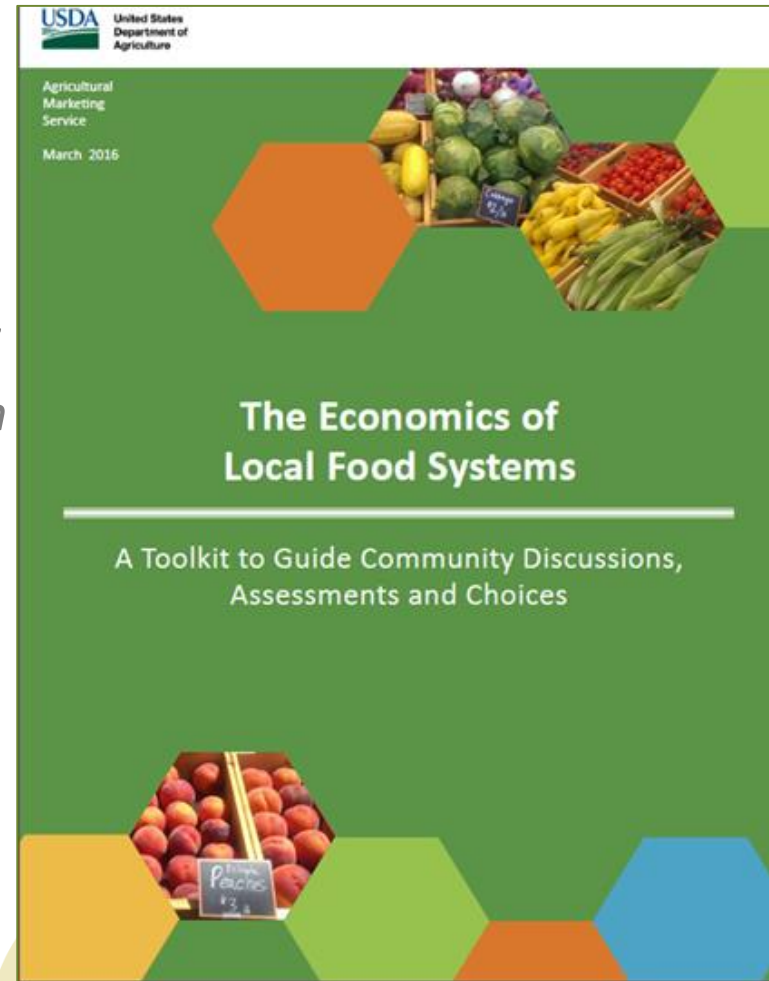- **Develop a roadmap to evaluate potential contributions and/or impacts.**

Who is Here?

INTRODUCTIONS FROM AUDIENCE

NAME ONE PROJECT/COMMUNITY OR GFC GOAL YOU WOULD LIKE TO FOCUS YOUR LEARNING ON

**……WHAT IS ONE INTERESTING DIMENSION OF THAT GOAL/CASE?**

The Toolkit Team: Dawn Thilmany, Coordinator

- **David Conner,** *University of Vermont*

- **Steve Deller,** *University of Wisconsin*

- **David Hughes,** *University of Tennessee*

- **Ken Meter and Megan Phillips Goldenberg,** *Crossroads Resource Center*

- **Alfonso Morales,** *University of Wisconsin*

- **Todd Schmit,** *Cornell University*

- **David Swenson,** *Iowa State University*

- **Allie Bauman, Rebecca Hill, Becca Jablonski,** *Colorado State University*

- **Debra Tropp and Samantha Schaffstall,** *USDA Agricultural Marketing Service*

USDA United States Department of Agriculture

Agricultural Marketing Service

March 2016

The Economics of Local Food Systems

A Toolkit to Guide Community Discussions, Assessments and Choices

growingfoodconnections.org

Why Did USDA AMS Sponsor the Toolkit?

- **Consumer demand for locally-produced food – currently estimated by USDA at nearly $9 billion – is creating new business opportunities for farmers and ranchers.**

- **Community stakeholders are beginning to recognize that local food systems can be a major contributor to community and economic development.**
  - However, much evidence to date has been <u>anecdotal or limited in scope.</u>
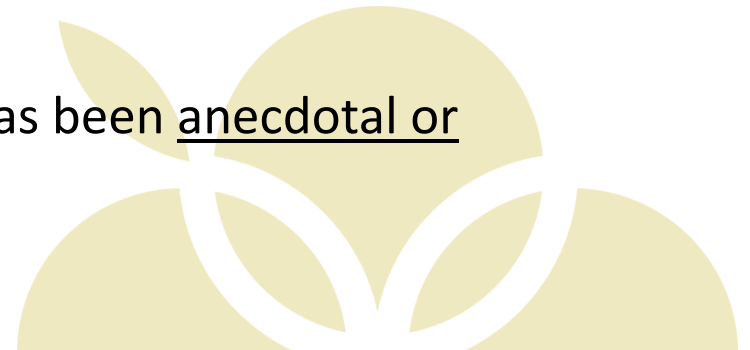
Why Did USDA AMS Sponsor the Toolkit?

Begs questions:

- **How do we more accurately _measure the impact_ of local food system investments?**

- **How do we help community stakeholders _make the economic case for local food_ when communicating with local decision makers?**

- **How do we ensure _greater uniformity and compatibility_ in local food research studies going forward, to allow for greater cross-comparisons?**

What the Toolkit offers:

- **Provides a <u>comprehensive, accessible overview of the economic impact literature</u> for local food systems.**

- **Benefits to researchers:**
  - Lots of work had been done on regional/State levels, but **previous efforts had rarely been integrated or compared.**
  - **Reflects unique ability of USDA/AMS** to recruit a multidisciplinary team of leading national researchers to share their research expertise and real-world field experiences.
  - **Encourages adoption** of more uniform, transparent and rigorous research methodologies.

Why do we need a standardized approach?

Meta-analysis of US intermediated food markets

This includes all entries	Rubric category	% of records containing information
Basic business information	Business name	100.00
	Business location	88.35
	Year founded	79.61
Financial data	Revenues	54.37
	Profitability	24.27
	Cost of goods sold (COGS)	3.88
	Labor expenses	1.94
	Rent expenses	0.97

Angelo et al. 2016 *British Food Journal*

Why Did USDA AMS Sponsor the Toolkit?

- **Benefits to communities:**
  - **Translates** the latest academic results and research into lay terms.
  - **Provides points of entry** to stakeholders at all levels of expertise.
  - **Proven methods and examples** that can help guide your community-based local foods assessment.
  - **Guidance** on how to structure a local food study so that it best reflects your community's priorities and needs.
  - **Better grasp of the potential – and the limitations** – of input/output analysis for evaluating economic impact
  - **Equips stakeholders** to gain more broad-based support for local food projects by gathering robust evidence.
  - **Empowers communities** to become more competitive in securing Federal grants by enabling them to more accurately estimate project benefits and tradeoffs.

What You Can Expect from the Toolkit

Guidance on:

- **Framing and structuring local food assessments**

- **Defining geographic boundaries to yield meaningful results**

- **Methods for collecting primary data**

- **Accessing and interpreting secondary data**

- **Selecting appropriate indicators of success;**

- **Developing and using local multiplier effects to estimate economic impact**

- **Customizing input/output (IMPLAN) software to best examine local food activities**

Structure of the Toolkit

- **Value of – and interest in – individual modules will vary depending on the ambitions and expertise of the assessment team.**

- **Meant to be used as a whole or in part, but does not necessarily need to be used from start to finish.**

  – Later modules assume knowledge of and findings from prior modules.

Structure of the Toolkit

- **Covers two stages of planning:**
  - **(1) Assessment**
  - **(2) Evaluation**

- **Modules 1-4:**
  - Guide the preliminary stages of an economic impact assessment - framing the study, relevant economic activities, and collecting and analyzing relevant primary and secondary data.

- **Modules 5-7:**
  - Overview of technical set of practices, including using information collected for a more rigorous analysis using input/output (IMPLAN) software.

Integrating the Community's Voice into your Assessment…

## FRAMING AND EFFECTIVE ASSESSMENT TEAM AND PROJECT

MODULE 1

Module 1: Structuring the Assessment: Framing and Scoping

- **Food System initiatives are diverse.**
  - Place based nature is key to success in meeting local needs

- **Be clear about scale and scope.**
  - You may want to assess the entire food system OR you may want to understand and enhance one segment/sector – e.g., improve market access for small scale producers

- **Know your human and financial resources.**

- **Graphics can help you frame and scope.**
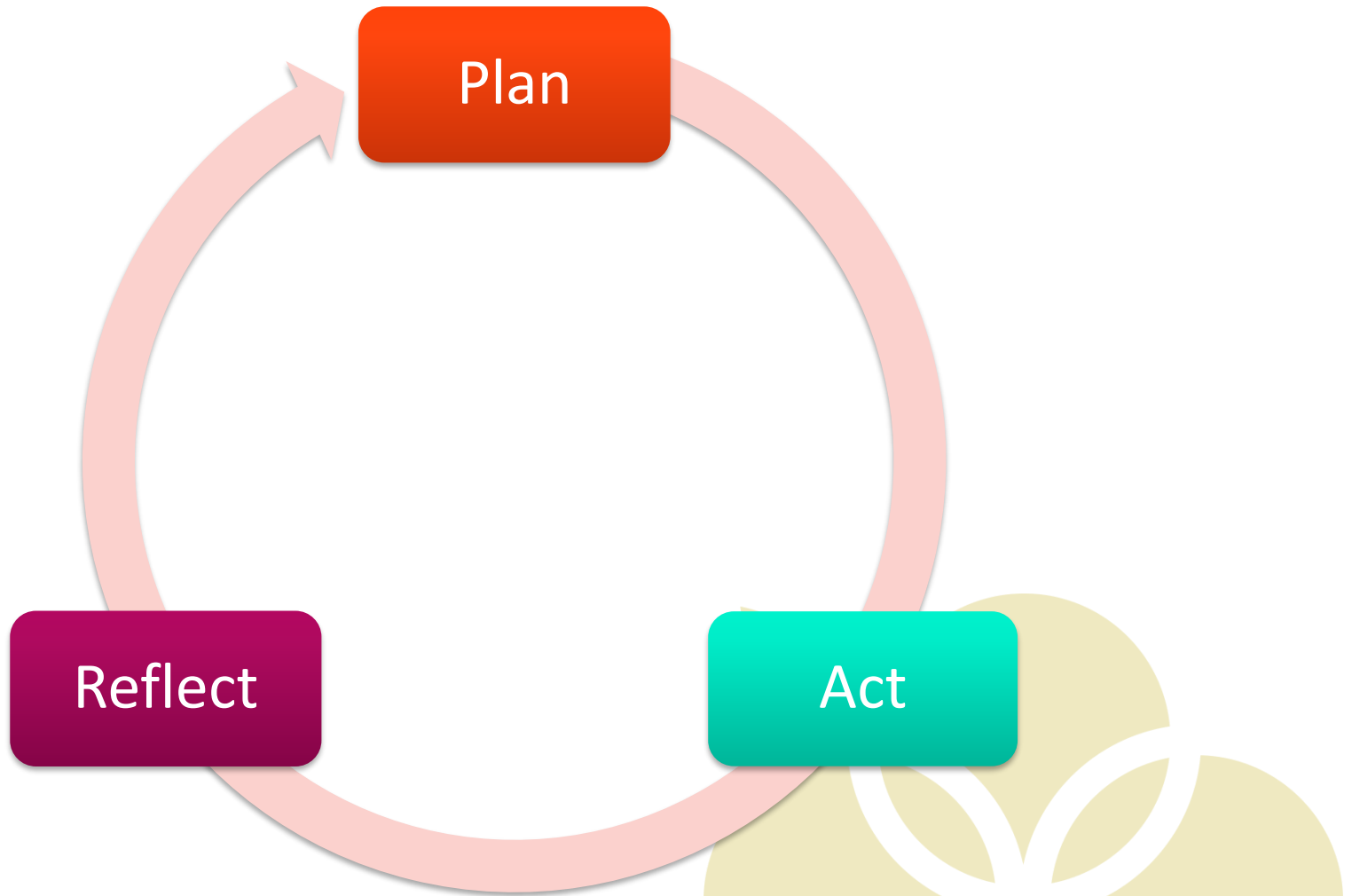
What is in place in Dona Ana County?

Vision:

"Our region has a thriving and inclusive food system that: 1) Provides affordable and abundant healthy food for our families and communities; 2) Provides a competitive financial return and esteem for our farmers, and generates sustainable employment and small business opportunities that promote a vibrant and equitable economy; 3) Protects and regenerates the health of our farmlands and natural resources."

Steering Committee Members:

Krysten Aguilar, La Semilla Food Center

Lorenzo Alba, Casa de Peregrinos

Jeff Anderson, Doña Ana County Cooperative Extension Services

Patricia Biever, Community & Constituent Services

Jorge Castillo, Doña Ana County Community Development

David Kraenzel, New Mexico State University

Claudia Mares, Doña Ana County Health & Human Services

Karim Martinez, Doña Ana County Cooperative Extension Services

Debra Sands Miller, Independent Contractor

Martie Olivas, Community & Constituent Services

Leah Whigham, Paso del Norte Institute for Healthy Living

What is in place in Luna County?

Vision

"To enhance food security, safety, and awareness by ensuring sustainable and economically viable agriculture for Luna County."

Steering Committee Members

Jack Blandford, Luna County Extension

Lori Coleman, Spanish Stirrup Rock Shop

Dorian Dodson, Friends of the Columbus Community Garden

Ben Etcheverry, Mizkan Americas

Jessica Etcheverry, Luna County Government

Leedrue Hyatt, Flying U Ranch

Ginger Jones, Deming Public Schools

Kenneth Leupold, Western New Mexico University

Joe Padilla, Luna County Government

Olivia Paez, Deming Public Schools

Zach Penn, Farmer

Claire Phillips, First United Methodist Church of Deming

Reggie Price, Dignity and Pride Charter Limo, LLC

Ben Rasmussen, National Center for Frontier Communities

Matt Robinson, Luna County Healthy Kids

Mark Schultz, Peppers Supermarket

Matthew Stong, Preferred Produce

A Strong Team is Key

- **Imagine what this team will have to tackle!**
  - Perspective MATTERS

- **Every assessment needs a "steering committee"**

- **Try to find a representative for each relevant sector, geographic region, and/or desired skill set.**
  - PERSPECTIVE MATTERS!
  - If you can't find a representative for each sector, region, or skill set, then you've already learned something about your food system.
  - Keep in mind folks will fall off or join up, so logistics matter…
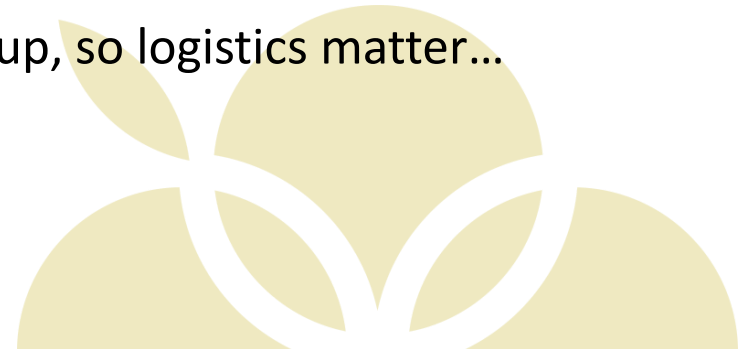
Assemble a Team

- **Does the team possess the necessary skills?**
  - Do you need to hire a facilitator? Rotate the work?
  - Can the local university or Extension office provide assistance?
  - Policy analyst/advocate, data analyst
  - GIS mapping background, strong writers,

relevant language and cultural knowledge,

public speakers, graphic design, etc.
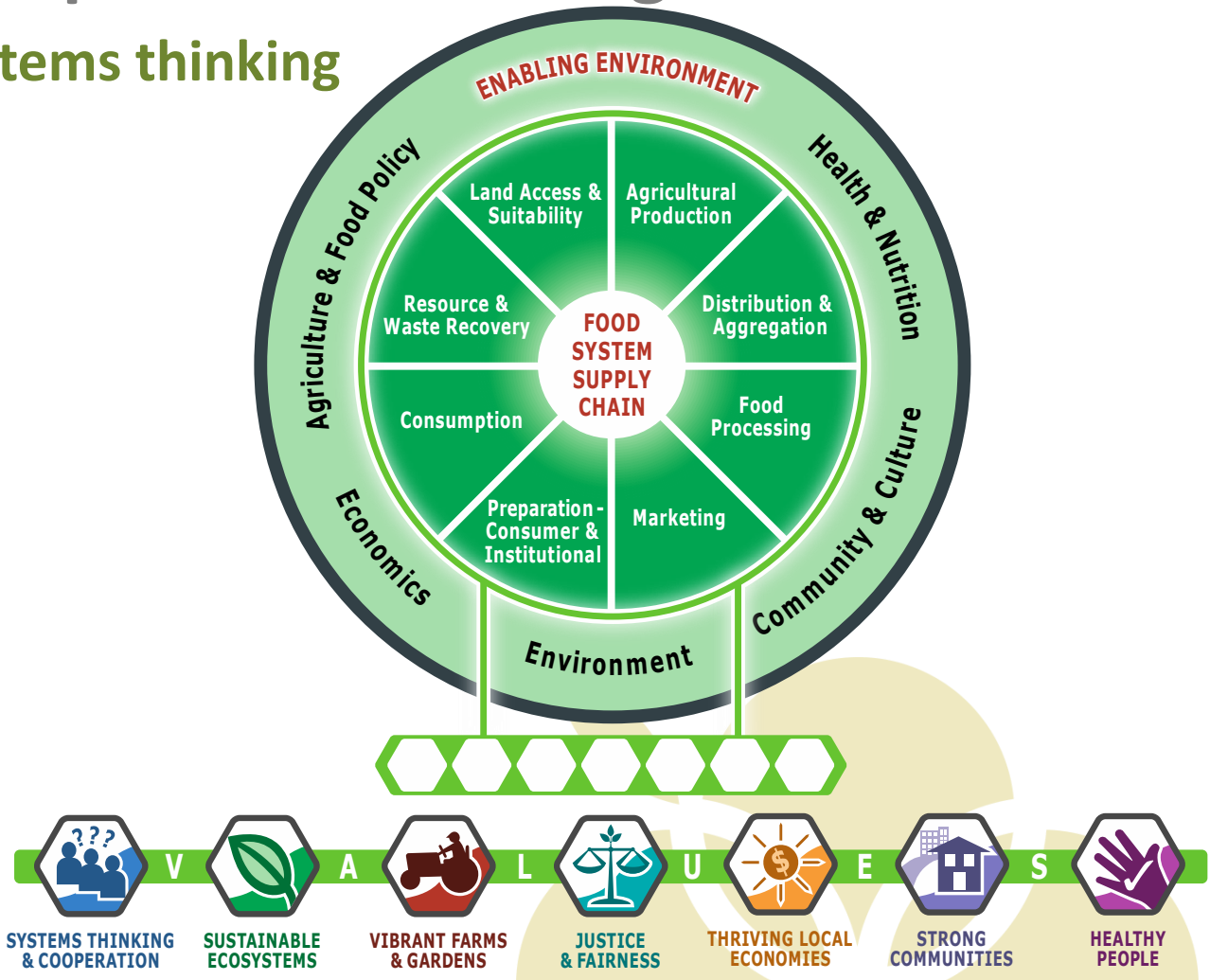
- **Enlist your "analyst" upfront**

I DON'T KNOW HOW TO DO STATISTICS BUT IT DOESN'T MATTER BECAUSE I DIDN'T HAVE DATA.
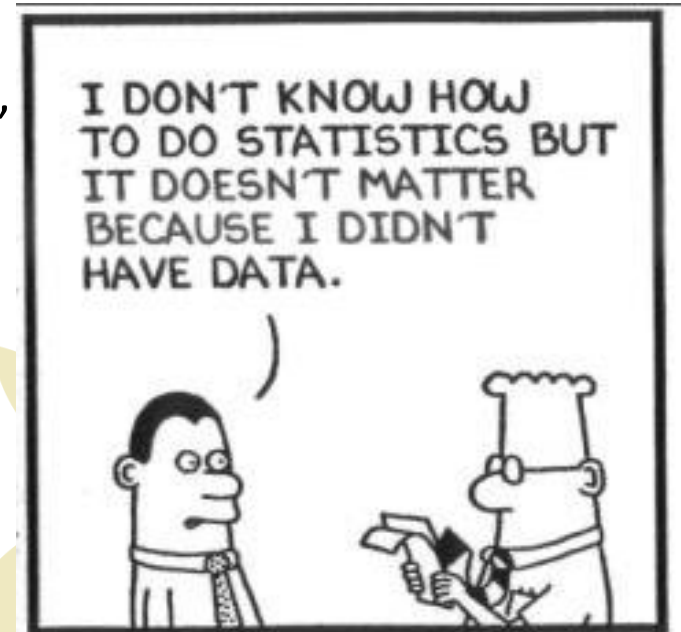
- **At a small scale…**
  - Diagnoses…
  - Motivates…
  - Predicts…

Fond du Lac, Wisconsin
Used with permission
USDA AFRI 2014-68006-21857

2015
Downtown Fond du Lac Farmers Market
www.downtownfdl.com/farmers-market
Facebook: @FondDuLacFarmersMarket   #FDLFarmersMarket

$188,687
Annual vendor sales

$18
Total spending per shopper

27
Avg. miles from farm to market

4
Ave. acres cultivated per vendor

8%
Visitors bicycle to the market

$26
Avg. spending at area businesses

Saturdays
May through October
8:00am to 12:00pm
Main Street

Wednesdays
June through October
11:00am to 3:00pm
Main Street Plaza

Module 1: Graphics and Framing

- **Prompts systems thinking**

USDA AFRI 2011-68004-30044

growingfoodconnections.org
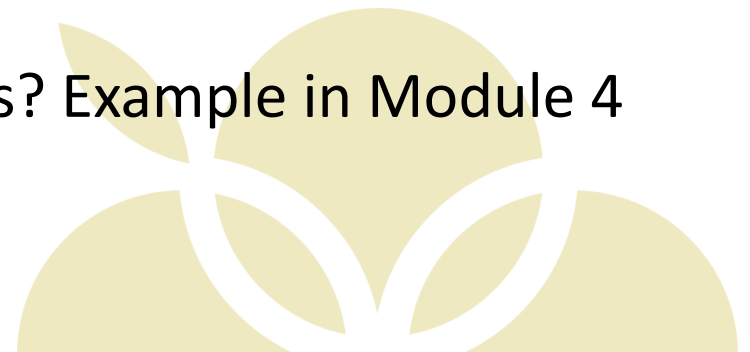
Identifying the Study Parameters and Priorities

Setting the Stage:

- **What is the goal of the study? You have these!**

- **How will you measure success? Multifaceted!**
  - Small Group exercise later
  - Different measurement modes

- **Who cares about your results? How will they use the information?**
  - What might MOTIVATE others? Example in Module 4 discussion

Collecting Data

SECONDARY & PRIMARY DATA COLLECTION

MODULES 2&3

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Module 2: Secondary Data

- **Discussion of available secondary data and examples of how it is used in assessments.**
  - Advantages of using what is already available first.
  - Data in this space is changing – new local foods census.

- **Toolkit provides list of most relevant secondary data sources (divided by supply chain), including key characteristics and limitations.**
  - http://www.localfoodeconomics.com/appendices/
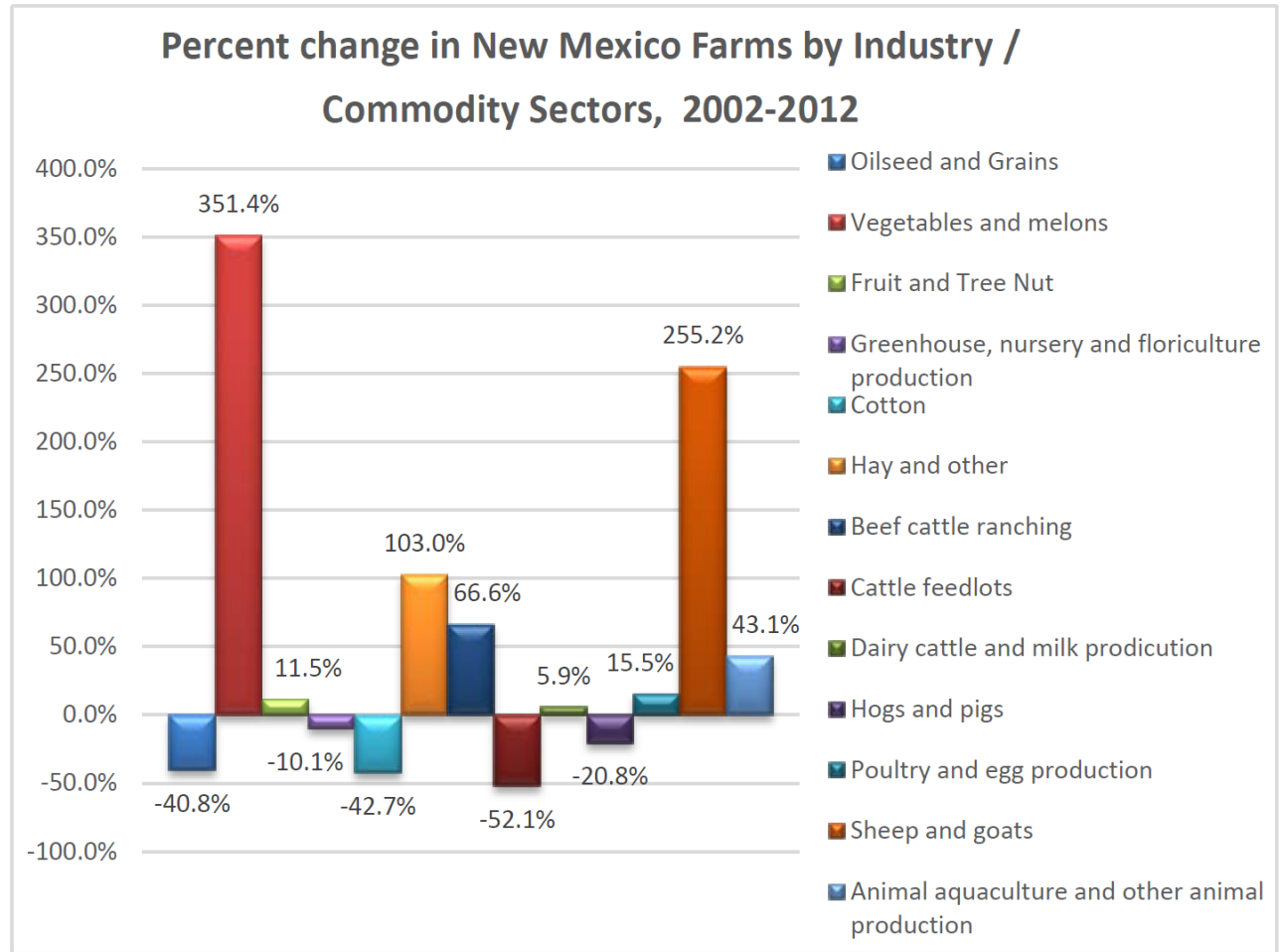
Use Secondary Data First

- **Secondary data was compiled by someone else and is now available to you:**
  - U.S. Census
  - Census of Agriculture

- **Use available data before investing in new research.**

- **Each data set has strengths and drawbacks.**

Value of Secondary Data

- **Abundant information is available from local, state, Federal, and private sources, usually free.**

- **Provides essential insights rather rapidly.**

- **Typically in standard formats.**

- **Often comparable across regions and across time.**

Percent change in New Mexico Farms by Industry / Commodity Sectors, 2002-2012

Legend:
- Oilseed and Grains
- Vegetables and melons
- Fruit and Tree Nut
- Greenhouse, nursery and floriculture production
- Cotton
- Hay and other
- Beef cattle ranching
- Cattle feedlots
- Dairy cattle and milk prodiuction
- Hogs and pigs
- Poultry and egg production
- Sheep and goats
- Animal aquaculture and other animal production

Data values shown: -40.8%, 351.4%, 11.5%, -10.1%, -42.7%, 103.0%, 66.6%, -52.1%, 5.9%, -20.8%, 15.5%, 255.2%, 43.1%

RESILIENCE IN NEW MEXICO AGRICULTURE

Opportunities, Challenges and Realities for New Mexico's Farming and Ranching Future

http://nmfirst.org/LiteratureRetrieve.aspx?ID=237563

GROWING FOOD CONNECTIONS

Doña Ana County Agriculture

Number of farms	2,187
Percent of land in farms	27%
Percent of farms that are small	95%
Average market value of agricultural products sold per farm	$351,000
Average age of farmers	61 years old

Source: USDA National Agricultural Statistics Service, 2012 Census of Agriculture

Doña Ana County Population

Area[1]	3,807 sq. miles
Population[2]	212,942
Percent of population below the poverty line[2]	28%
Percent of students eligible for free or reduced lunch[3]	75%

Sources: [1] U.S. Census Bureau Quick Facts; [2] 2014 American Community Survey 5-Year Estimates; [3] USDA Economic Research Service, Food Environment Atlas, 2010

Agriculture and Food Production   With 1,000 square miles of farm and ranch land, Doña Ana County's agriculture remains strong despite a swelling urban population and 15 years of drought. A significant infrastructure of irrigation ditches dating back to the 19th century diverts water from the Rio Grande to support agriculture — especially pecan production. However, water availability is a critical limiting factor to expanding food production, and with growing urbanization, water conservation and management will become increasingly important to address.

Doña Ana County leads all U.S. counties in pecan production and leads New Mexican counties in acres of orchard production. With 84% of its farmland in pasture, it leads the state in forage production and is second in both vegetable and cotton production. It also has a significant dairy industry and produces cattle, feed for cattle, sheep and lambs, fruits, honey, and the prized Hatch green chile pepper. While Doña Ana County has some very large farms in terms of both sales and acreage, the U.S. Department of Agriculture (USDA) designates 95% of its farms as small (grossing less than $250,000 in cash farm income annually), and 65% are very small, grossing less $20,000 annually. In spite of all its assets, limited access to land, water rights, and infrastructure for aggregation and processing create barriers for the county's beginning, small, and mid-sized farmers.

http://growingfoodconnections.org/wp-content/uploads/sites/3/2016/05/GFC_COO_Profiles_Dona_Ana_County_20160606.pdf

GROWING FOOD CONNECTIONS

Luna County Agriculture

Number of farms	190
Percent of land in farms	29%
Percent of farms that are small	80%
Average market value of agricultural products sold per farm	$329,000
Average age of farmers	59 years old

Source: USDA National Agricultural Statistics Service, 2012 Census of Agriculture

Food Access   Many individuals and families across Luna County find it challenging to afford and secure healthy food. At one local grocer, redemption of Supplemental Nutrition Assistance Program (SNAP) benefits has more than doubled since 2008. With shopping concentrated in the city of Deming, transportation is a barrier, especially for people living in the colonias, rural areas, and Columbus. However, the county has responded with an on-demand transportation service, which residents can use to get to grocery stores.

More than 99% of Luna County's school children qualify for free and reduced lunch, and schools provide all students with

Luna County Population

Area[1]	2,965 sq. miles
Population[2]	24,947
Percent of population below the poverty line[2]	30%
Percent of students eligible for free or reduced lunch[3]	99%

Sources: [1] U.S. Census Bureau Quick Facts; [2] 2014 American Community Survey 5-Year Estimates; [3] USDA Economic Research Service, Food Environment Atlas, 2010

Most of Luna County's agricultural products are sold wholesale and shipped out of county. Aside from Mizkan Americas, some onion sheds, small-scale chile processing, and wineries, little infrastructure is in place to support aggregating, processing, storing, or other ways of adding value to local products. Even though 80% of the county's producers are small (grossing less than $250,000 in cash farm income annually), very few sell directly to consumers.

http://growingfoodconnections.org/wp-content/uploads/sites/3/2016/06/GFC_COO_Profiles_Luna_County_20160606.pdf

One example: BLS Consumer Expenditures

- **BLS Consumer Expenditure Survey**
  - Posts annual reports at www.bls.gov/cex
  - Categorizes the survey results by income level, region, race, ethnicity and other relevant attributes.
  - For example, you can look up how much money was spent buying food each year by an average household in one particular region of the country.
  - This allows you to calculate a reasonable approximation of the amount residents of your community spend each year.

Module 2: Secondary Data

- **Example: BLS Consumer Expenditure Survey**
  - Includes interviews from ~120,000 households/year.
  - Tracks what households spend for consumer purchases.

Example expenditure data for a small city ($ millions)

Total food purchased by households	$83.3
Beef	$2.4
Pork	$1.9
Other meats	$1.3
Poultry	$2.0
Fish and seafood	$1.7
Eggs	$0.7

Case Study 2: ERS Food Consumption

- **USDA ERS Food Availability**
  - http://www.ers.usda.gov/data-products/food-availability-(per-capita)-data-system.aspx
- **National estimate of per capita consumption.**
- **Calculated by taking into account production, imports, exports, waste, & other uses.**
- **Reported annually.**

ERS Food Consumption for One County

	Pounds
Artichokes	601,675
Asparagus	765,397
Dry Beans	2,709,407
Dry Peas	519,580
Beans, Lima	166,612
Beans, Snap	3,088,786
Beets	268,300
Broccoli	4,413,798

Mapping Expenditures: Colorado

https://co.foodmarketmaker.com/
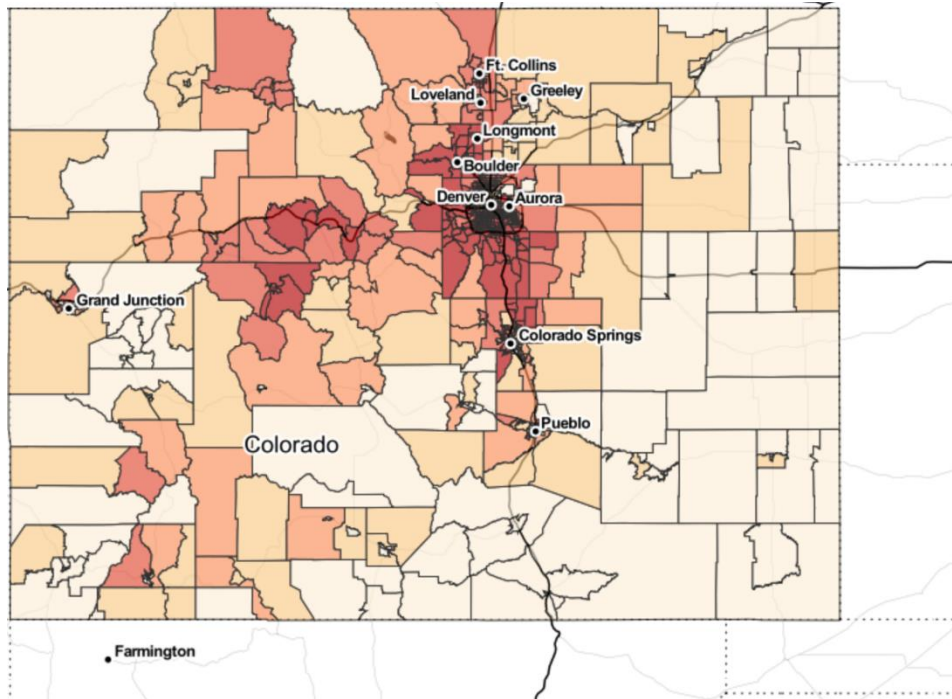
Select State   Colorado ▾

Transparency

Map it!   ☐ Disable re-centering   Custom Select is OF

Map Legend

Census Profile   Business Results   Query Display

Unit: $ by census tract

	0 - 583
	584 - 694
	695 - 822
	823 - 1,032
	1,033 - 2,524

Components of the Marketing Bill-2012

2012 Food dollar: Industry Group (nominal)

Agribusiness 2.4¢
Farm production 9.7¢
Food processing 15.8¢
Transportation 3.3¢
Packaging 2.7¢
Wholesale trade 9.3¢
Retail trade 13¢
Foodservices 31.1¢
Energy 5.6¢
Finance & Insurance 3.3¢
Other 3.8¢

ERS, USDA

https://www.ers.usda.gov/data-products/food-dollar-series
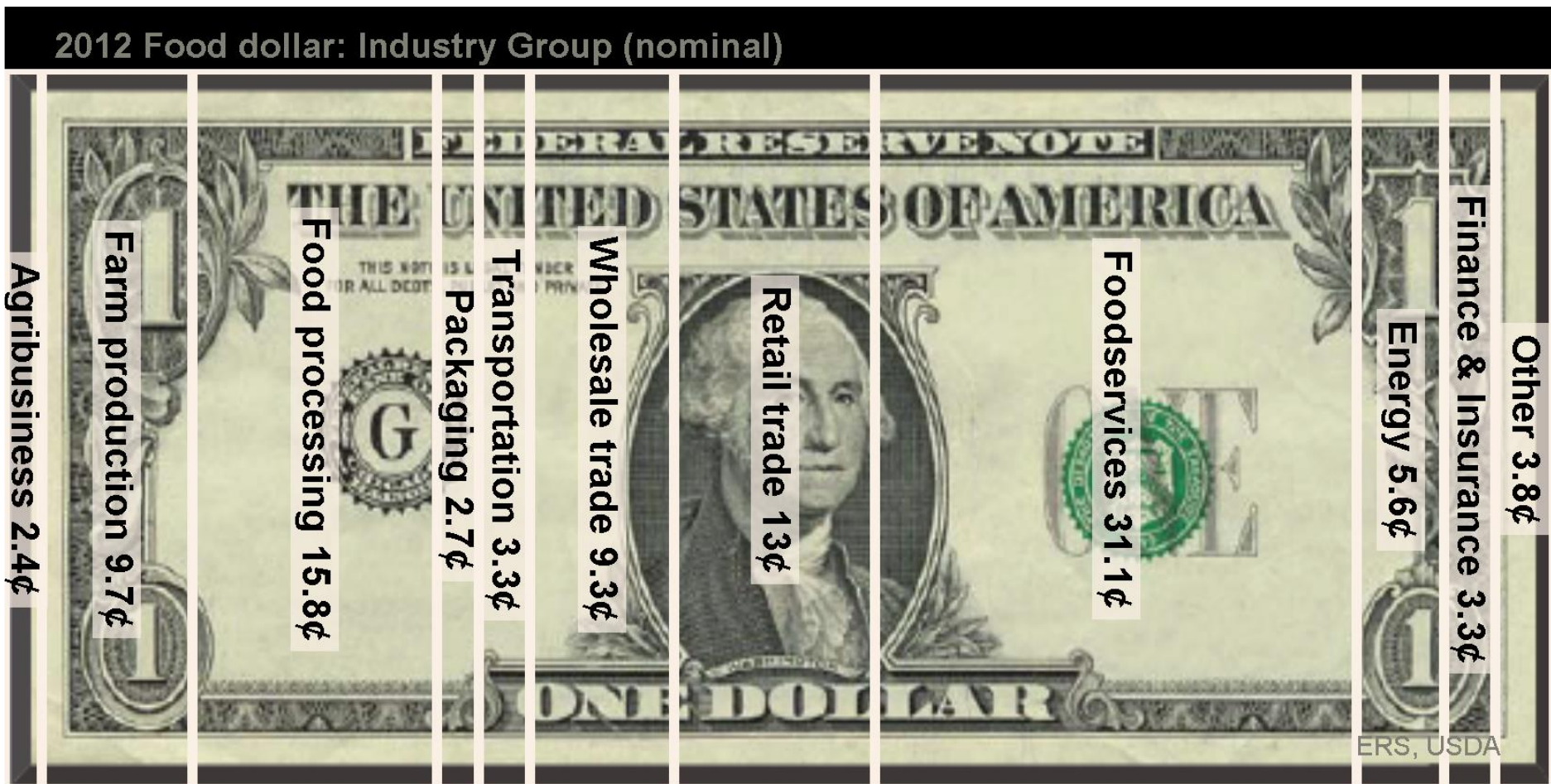
Farmer's Share of Retail Price: by Food Group
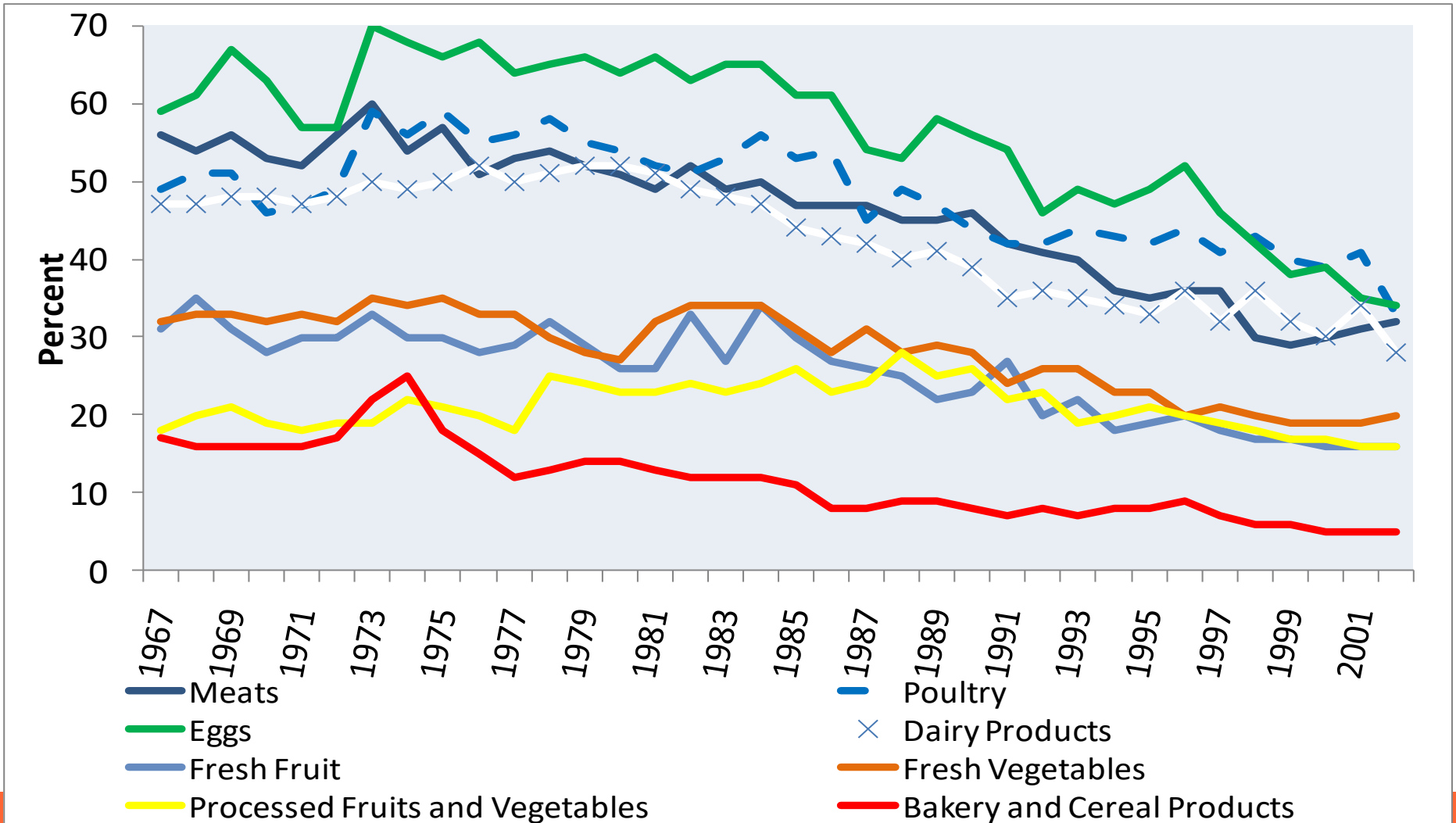
Farm-to-Retail Price Spread

Table 2. Average Farm Share of Selected Food Products

(averages for 2008-2010 period)

Food Type	Food Item	Average Farm Share of Retail Price (%)
Animal products	Eggs, Grade A large, 1 doz.	52.7
Animal products	Whole Milk, 1 gal.	50.7
Animal products	Beef, fresh, 1 lb.	44.8
Animal products	Poultry meat (composite), 1 lb.	41.9
Animal products	Cheese, natural cheddar, 1 lb.	31.4
Crop products	Sugar, 1 lb.	28.1
Animal products	Pork, fresh, 1 lb.	27.0
Crop products	Margarine, 1 lb.	25.5
Fresh Vegetables	Fresh—Lettuce, 1 lb.	24.7
Fresh Vegetables	Broccoli, cut, 1 lb.	23.8
Crop products	Flour, wheat, 1 lb.	23.5
Fresh Fruit	Apples, red delicious, 1 lb.	23.4
Processed Fruit	Orange juice concentrate, reconstituted, 1 gal.	21.3
Fresh Vegetables	Potatoes, 1 lb.	18.7
Animal products	Ice Cream, regular, 1 gal.	16.8
Fresh Fruit	Fresh—Lemons, 1 lb.	16.0
Fresh Fruit	Fresh—Oranges, California, 1 lb.	12.9
Fresh Fruit	Grapefruit, 1 lb.	11.8

Source: USDA, ERS; calculated by ERS based on data from government and private sources. Available as the "Individual foods" database at http://www.ers.usda.gov/Data/FarmToConsumer/pricespreads.htm.

Costs in Different Market Channels

Table 1. Comparison of transaction costs by market

	Farmers market: 20 weeks/40 markets		Institutional market: 20 weeks	
Transportation vehicle expenses	$.25/mi, 3,200 miles	$ 800	$.25/mi, 1,600 miles	$ 400
Labor charges	2 people @ 12hr/wk, 20wks, @$10/hr	$4,800	1 person @ 4hr/wk, 20wks, @$10/hr (includes selling)	$ 800
Supplies (bags, sacks, other supplies)	$20/wk	$ 400	$30/wk	$ 600
Total transaction costs for the season		$6,000		$1,800
Total transaction costs allocated to tomatoes (20% of total sales)		$1,200		$ 360
Total transaction costs/lb sold	(760 lbs sold)	$1.58	(800 lbs sold)	$ .45

Source: Chase, Pricing for Profit:
http://www.agmrc.org/business_development/operating_a_business/direct_marketing/articles/pricing-for-profit

Example 1.	Farmers' market	Institutional market
Expected selling price	$3.00	$2.10
Production and transaction costs	$1.96	$0.83
Estimated profit	$1.04	$1.27
Estimated price mark-up	53%	153%
Number of pounds sold	760 lb.	800 lb.
Estimated profit	$790	$1,016

- The expected selling price at the farmer's market is $3.00 per pound on average over the entire season.

- The price mark-up goal for taking produce to the farmers' market or the institutional market is 100 percent.

- The comparable institutional market is a natural food store selling local tomatoes for $3.00 per pound. Their desired gross margin is 30 percent on produce so they are willing to pay no more than $2.10 per pound.

Complementary NIFA Research Project

- **Characterizes a "typology" of new small and mid-size farm business models & local/regional food value chains.**

  – How the new models may differentially interact with local economic dynamics....watch for benchmarks this year!

http://www.localfoodeconomics.com/benchmarks

growingfoodconnections.org

Change in Direct Food Sales by U.S. Farms
1997 - 2002

Change in Direct Food Sales
1997 to 2002 (in $1,000s)
Agriculture Census - Map by Ken Meter 2006

- (1,549) - (124)
- (123) - 0
- 1 - 164
- 165 - 718
- 719 - 5,621
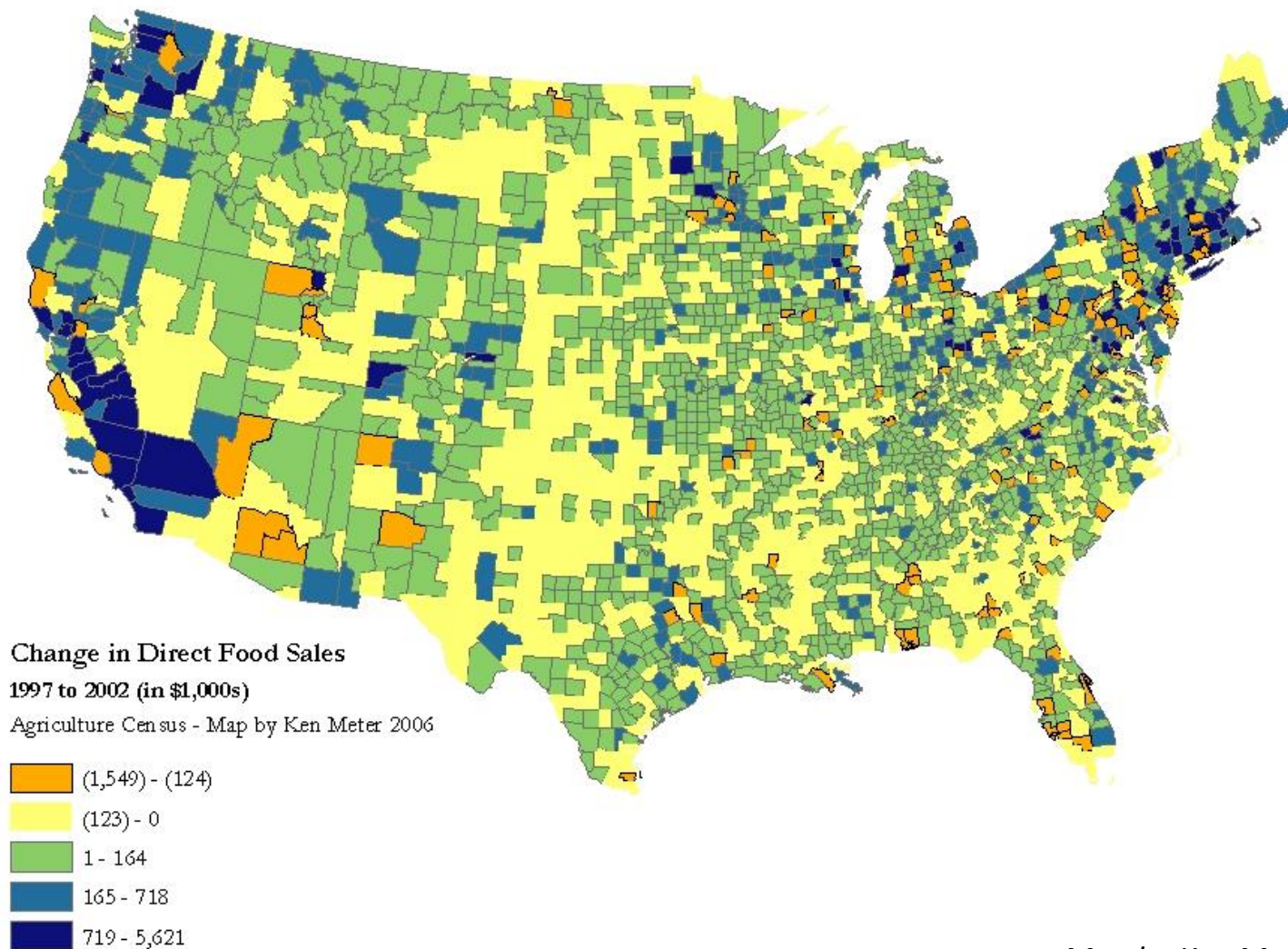
Map by Ken Meter 2005

Module 3: Primary Data Collection

Module 3: Primary Data Collection

- **Discussion of when and how to supplement with primary data collection.**

- **Detailed information about:**
  - Qualitative and quantitative methods – including best practices for sampling, surveying, interviewing, etc.
  - How to integrate primary and secondary data to tell your story and examples of where this has been done successfully.

Words of caution before you begin…

- **Primary data collection, analysis, and interpretation requires skill and training.**

- **It often costs, at a minimum, several thousand dollars to conduct even a small study.**
  - You may need to hire people to test and administer the surveys/interviews, pay for travel, compensate respondents for their time, etc.

Is it Time to Collect Primary Data?

- **Review and re-evaluate your goals and objectives.**

- **Have you tried to answer your questions with secondary data?**

- **Why aren't the secondary data good enough?**

- **What else do you need to know?**

- **Do you have the time and resources to continue?**

Case Study: Farmers Market in Michigan

- **Farmers Market Data**
  - Vendor sales for fresh produce at each market, as reported by the vendors.

- **Foot traffic, as recorded by the market manager.**

MI Farmers Market Data

Legend: Sales of fresh produce (green), Foot Traffic (orange)

X-axis: 6/5/14, 6/12/14, 6/19/14, 6/26/14, 7/3/14, 7/10/14, 7/17/14, 7/24/14, 7/31/14, 8/7/14, 8/14/14, 8/21/14, 8/28/14, 9/4/14, 9/11/14, 9/18/14, 9/25/14, 10/2/14

Y-axis: 0, 500, 1000, 1500, 2000, 2500, 3000, 3500
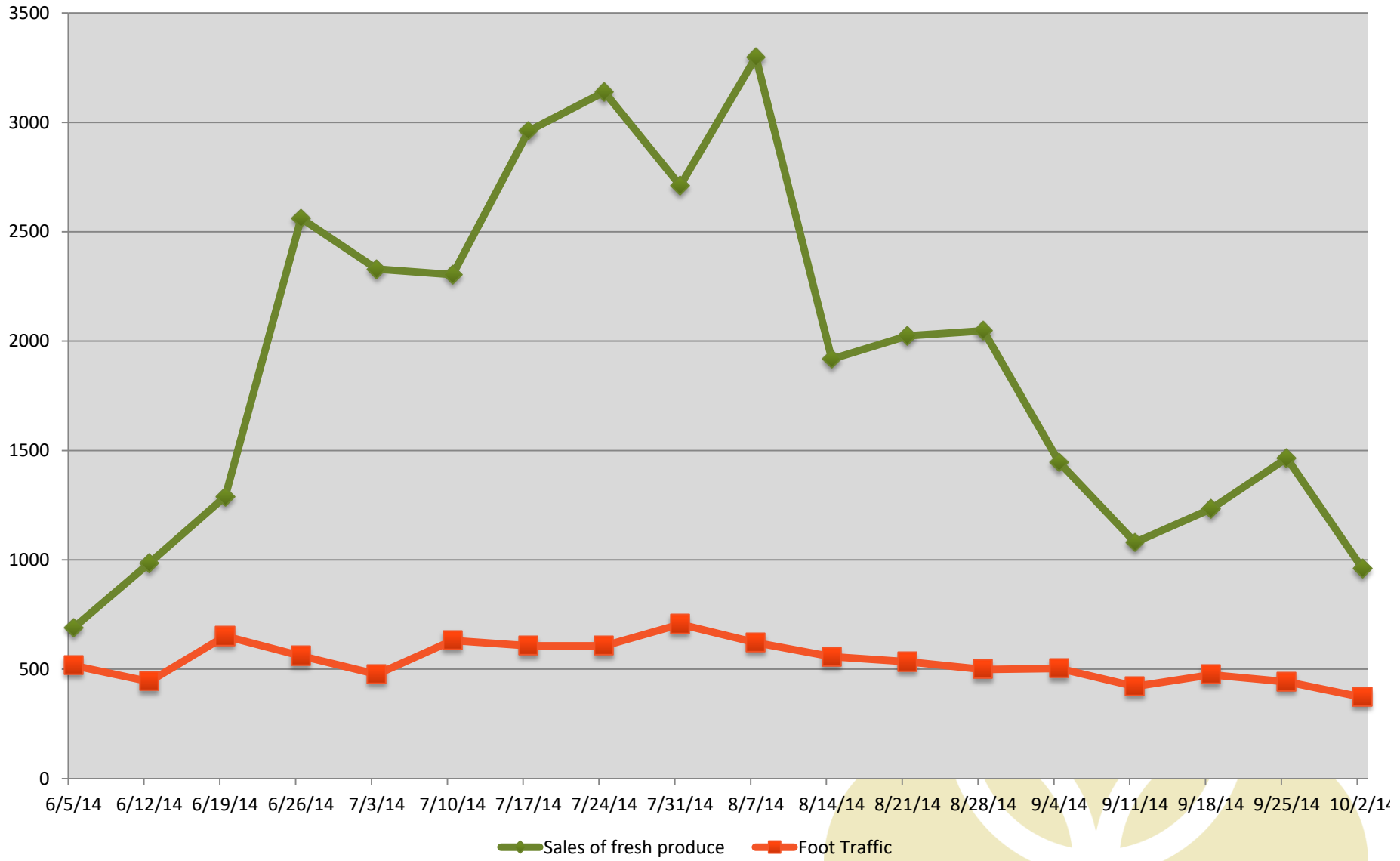
Fresh produce sales at a MI farmers market, $ per person

Fresh produce sales per person
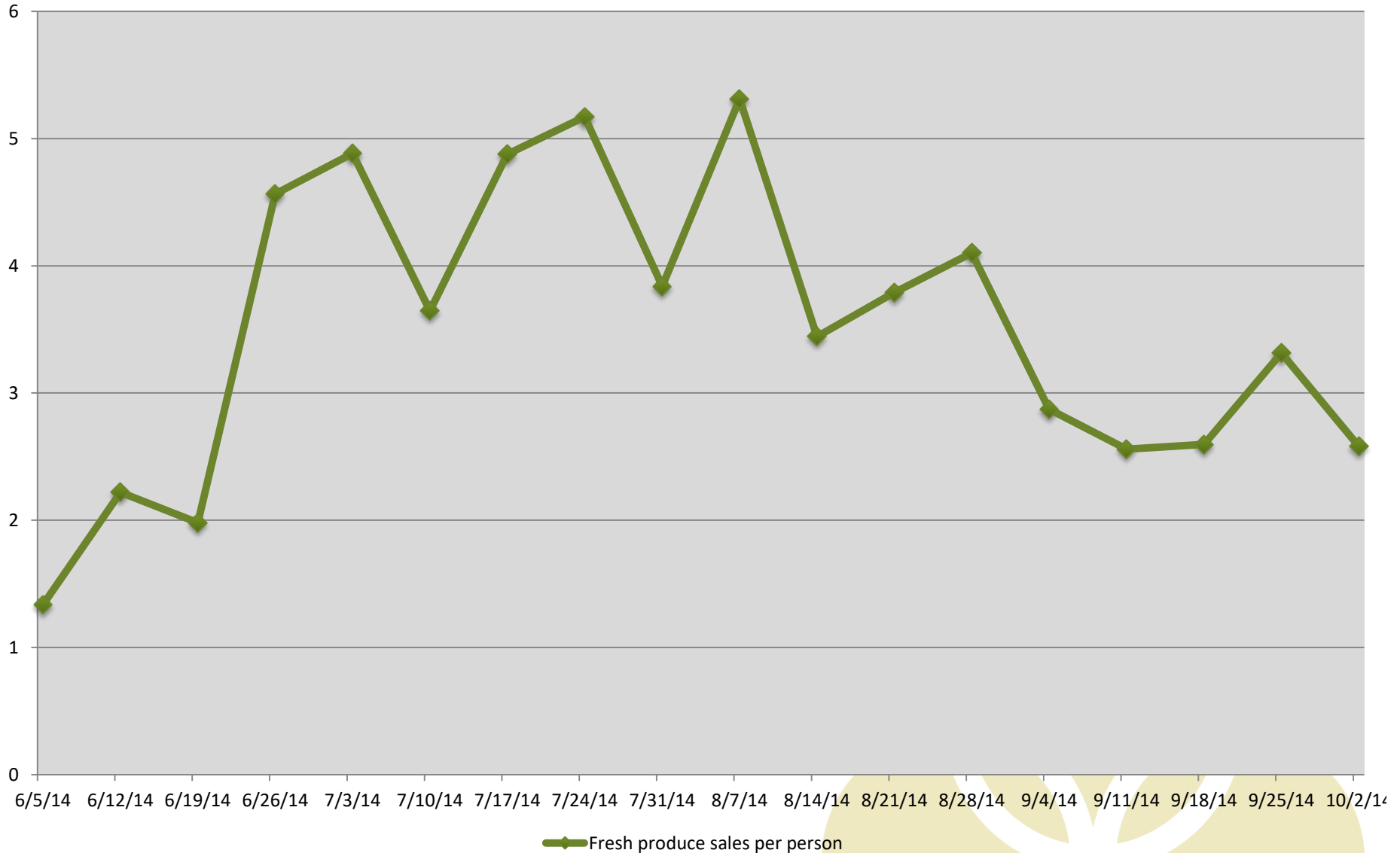
Types of Primary Data Collection

- **Surveys**
  - Example: Dot survey at a farmers market.

- **Interviews or Focus Groups**
  - Example: Convene small group to discuss a set of questions.
  - Example: Interview farmers at their farms.

- **Observations**
  - Example: Count shoppers at a farmers market.

Sampling Methods

- **Probabilistic sample**
  - Target a certain group to serve your needs (farmers).

- **Quota sample**
  - Set targets or limits for groups of respondents.
  - Helps eliminate some bias.

- **Snowball sample**
  - Ask your respondents to identify additional respondents.

- **Convenience sample**
  - Find respondents who are most convenient (farmers' market shoppers).
  - Easiest and least expensive.

Qualitative Methods

Observations and interviews

- **There is a broad array of things to look for, such as:**

  – Participants (who is there, how many, what are their demographic attributes);

  – Behaviors (what do they do, for how long);

  – Interactions (who do they talk to, work with, what is the non-verbal communication happening);

  – Physical environment (sights, sounds, climate, location);

  – Outcomes (what happens as a result).

- **Open-ended text questions on a survey.**

Qualitative Interviews

- **Interviews may involve one-on-one discussions, or convening a focus group.**

- **It is good to assemble a formal list of questions but you may choose to deviate from that list.**
  - One response may provoke you to ask deeper questions.
  - Open-ended questions allow respondents to respond in their own words.

- **Group interviews may collect more insights, but some respondents may remain quiet.**

Case Example: Dot Surveys

Special Report 1088-E
Originally published in this format in 2002
Oregon Small Farms Technical Report No. 6

May 2008

Tools for Rapid Market Assessments

Oregon State UNIVERSITY Extension Service

- **Dot Poster Surveys, also known as *Rapid Market Assessments***
  - Developed by researchers at Oregon State University to gather information from farmers' market patrons.
  - Many advantages:
    - Simple to administer, responses are easily tallied, and possible to get a large set of responses in a short period of time.
    - Respondents report that this method is faster to complete, more fun, and less intrusive than written surveys or face-to-face interviews.

USDA

Upper Peninsula (Michigan) Local Farm & Food Economy

Ken Meter, 2013

- Large compilation of secondary data sources:
  - Federal Census, Ag Census, CDC, ERS, BEA, BLS.

- Farm Production Balance using BEA data:
  - 2,193 U.P. farmers sell **$91.7 million** of food commodities per year (1989-2011 average), spending $**93.6 million** to raise them, for an annual loss of **$1.8 million**. This is an average net loss of $820 per farm.

Upper Peninsula (Michigan) Local Farm & Food Economy (2013)

Farmers suffer **$1.8 million** production losses / year

Farmers buy **$42 million** of outside inputs

Total leakage: $744 million

Consumers spend **$700 million** buying food from outside

Let the Data Speak

- **Use graphs, charts, maps, & infographics**

How Buffalo Is Doing

Average percentage of households with low vehicular access per block group within five minute (.25 mile) walk of a healthy food retail destination
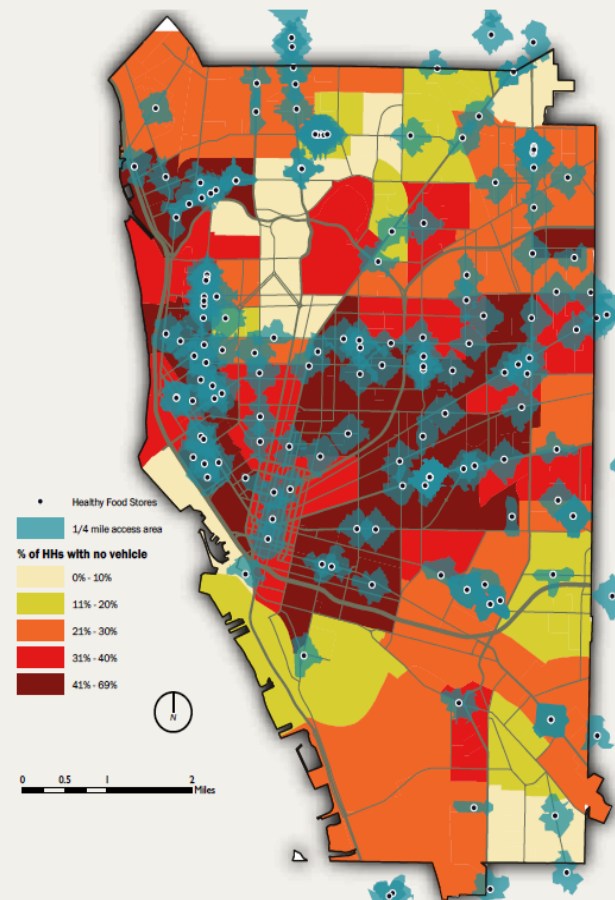

	BASELINE	5 YR GOAL
	50%	55%
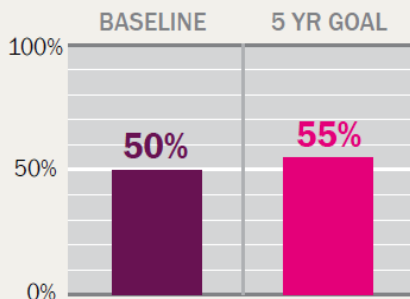
Data Details

DEFINITION	Percentage; [(Number of census blocks with low vehicular access (more than 40% of households without access to a motor-vehicle) and within a .25 mile walk from healthy retail/Total number of census blocks in the City of Buffalo)*100]
GEOGRAPHIC SCALE	Citywide
DATA SOURCE	Reference USA; US Census 2010
NOTES	*Supermarkets and grocery stores

Location of healthy food retail in relationship to block groups with low vehicular access

- Healthy Food Stores
- 1/4 mile access area

% of HHs with no vehicle
- 0% - 10%
- 11% - 20%
- 21% - 30%
- 31% - 40%
- 41% - 69%

Source: Raja et al.

Craft a Narrative

"I don't have a positive outlook on row crops. I am looking for new products where I don't have to deal with commodity exchanges."

Farmer adds vegetables to cotton farm

Photo © Ken Meter, 2015

Integrating the Community's Voice into your Assessment…

ENGAGING YOUR COMMUNITY: INTERPRETING AND ACTING ON DATA

MODULE 4

Module 4: Engaging your community and interpreting the data

- **Communities are diverse.**
  - Integrating Place and Perspective is key to success in meeting local needs

- **Be clear about scale and scope.**
  - Which elements of the supply chain will you embrace?
  - Which levers can community organizations move?

- **Know your human and financial resources.**

Hernando Mississippi

- **Data can help you frame, report, and build relationships.**

- **City managed farmers market recruited to USDA grant.**

- **Learned to collect data from market.**

- **Analyzed and Interpreted SFMNP data.**

$6,995

We accept
**Senior Farmers Market
Nutrition Program
benefits**
Providing fresh food to our senior
neighbors who need it most

Hernando Mississippi

- **Engaged new partners with that data.**

- **New partnerships earned:**

  – AARP senior friendly community

  – $50,000 grant from National Aging and Disability Transportation Center to enhance access to market

Let's Turn to YOU

- **Small groups please – Consider the graphics from Module 1 – let's ask some questions...**

  – What are some hard facts? Where are they located?

  – Who are the players?

  – Do they agree on the interpretations?

Exercise…

- **Turn to the handouts…Let's TENTATIVELY put some goals and objectives on paper…**

- **Let's talk and learn from each other.**

- **Think.**

- **Pair/Share.**

- **THEN on to Mod 5-7 – SAM! Take it away….**

Introduction to Economic Impact Assessment

ANALYZING LINKAGES OF LOCAL FOODS TO LOCAL ECONOMIES

MODULE 5

Primary Elements of Module 5

- **How to conceptualize the local foods system and changes that may be occurring in an economic context:**
    - Basic community economics concepts;
    - Input-output model terminology and basic structure;
    - How a multiplier is calculated;
    - And, economic impact analysis limits and cautions.

Clarifying Economic Terms

- **Growth is a dynamic concept that looks at *change over a period of time.***
  - Growth is synonymous with expansion; for example, more jobs, more people, more businesses, or more income.
- **In contrast, development is related to *improvement relative to some starting condition*, or sustained progress toward a particular goal.**
  - This could be movement toward a more sustainable use of resources, or enhancing the quality of life in the community.
- **Growth is relatively easy to measure whereas development is a more nebulous concept.**

Clarifying Economic Terms

- **Impact tends to be associated with a specific event or change in behavior and can be static or dynamic.**

- **Consequently, impact assessment is comparing and contrasting what a community looks like before and after a particular event or change in behavior.**

  – Often referred to as a **shock.**

  – Or, "but for" our scenario, the economy would have...

Economic Impacts of Local Foods

- **One way to frame the impact of local food growth is considering it import substitution.**

- **When locally produced foods are substituted for imported items, stronger regional linkages are forged.**

  – If local foods production and consumption increase, there are economy-wide consequences.

  – Money that previously left the economy stays and is allowed to multiply through.

Farm Share of Local Food

- In mainstream supply chains, farmers **retain only 17.4 cents** of the consumer food dollar on average.
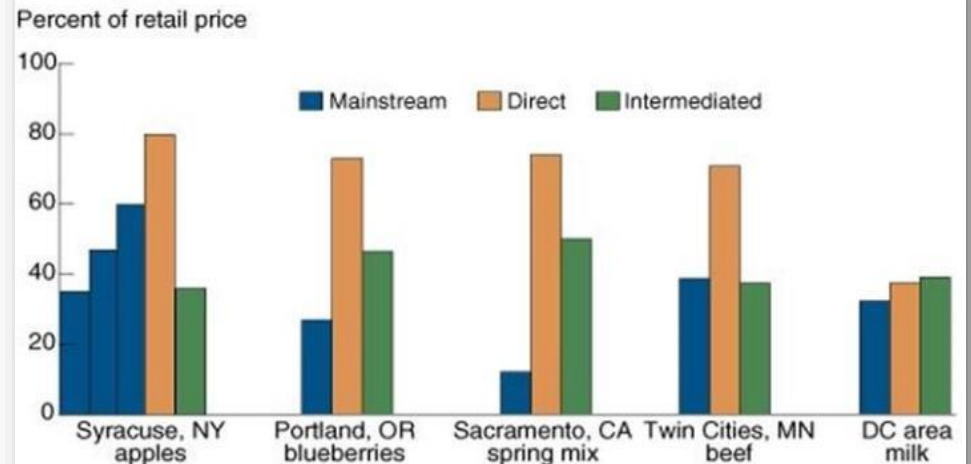
Different story in local food systems…

- In "short" supply chains, local producers received up to **seven times the share of the retail price** compared to mainstream chains.

- Food hubs often **return between 75 to 85** percent of their wholesale sales revenues to their producers.

Farm Share of U.S. Consumer Food Dollar (2012)

Farm share 17.4¢

Marketing share 82.6¢

Producers in direct marketing supply chains in 2009 retained highest share of retail price

Percent of retail price

Mainstream   Direct   Intermediated

Syracuse, NY apples | Portland, OR blueberries | Sacramento, CA spring mix | Twin Cities, MN beef | DC area milk

Source: USDA, Economic Research Service.

growingfoodconnections.org

Intervale Food Hub, Burlington, VT

- *Intervale* works with producers to **determine prices based on actual production costs** for producers and what the market can realistically manage.

- *Intervale's* producers generally **net 60-70% of the retail revenue obtained from CSAs** and **85% of the revenue obtained from distribution to wholesale customers** through the hub.

https://www.intervalefoodhub.com

Red Tomato, Canton, MA

- Coordinates aggregation, transportation and sales for roughly 40 farmers to grocery stores in the Northeast.

- Employs a variety of product differentiation strategies – regional branding, source identification and the verified use of sustainable production practices like IPM.

- November 2009 case study: retailer agreed to sell RT's tomatoes at $2.79/lb. compared to standard retail price for the same commodity of $1.99/lb. given **the unique attributes of the product.**

- Combination of cost savings in shared logistics and a higher wholesale price led RT's producers to receive **3x higher returns** than they received for comparable items outside the value chain.

Red Tomato stands for the best in flavor and t local family farmers have to offer.

http://www.redtomato.org

Multipliers

- **What is an (economic) multiplier?**

  - A number that describes how the local economy changes when <u>new economic activity</u> is introduced/removed (or 'event').

    - Can be in units of output, jobs, wages, value-added, etc.

  - Always greater than 1.

  - Larger numbers indicate more economic activity associated with the particular event.

  - It is specific to <u>both</u> a geography and industry.

  - They give a measure of how interconnected a given sector is to its local economy.

Multipliers (continued)

- **Measures how dense the supply chain (a.k.a., linkages) associated with the event is within the study region.**

  – As the multiplier grows, it indicates that there are more components of the supply chain present locally

- **Usually described in 3 parts:**

  – <u>Direct impact:</u> this is the event causing the local change

  – <u>Indirect impact:</u> this is the change to local firms due to purchases by the event (e.g., increased production due to purchases by the new firm)

  – <u>Induced impact:</u> this is the change in household consumption due to the creation of new income by the direct and indirect impacts
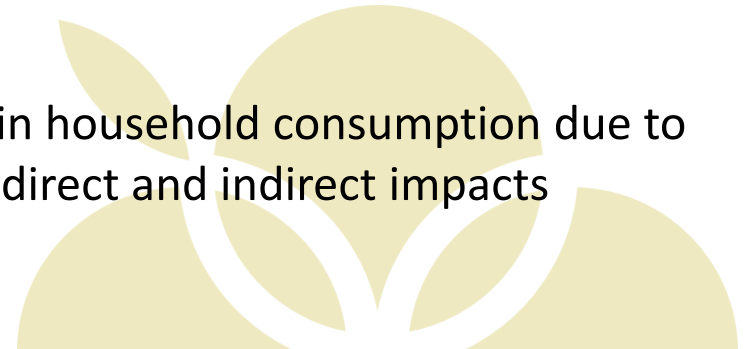
Multipliers (continued)

- **Example:**

  – Craft Brewery in SE OK is expanding its production by 30 employees (roughly, $6.7 million in output).

  – Multiplier for breweries in the county of operation is 1.499.

  – Based upon existing industries in this county, one would expect the increased output to generate a total economic impact $9.986 million.

    - Direct impact: $6.66 million

    - Indirect impact: $0.92 million

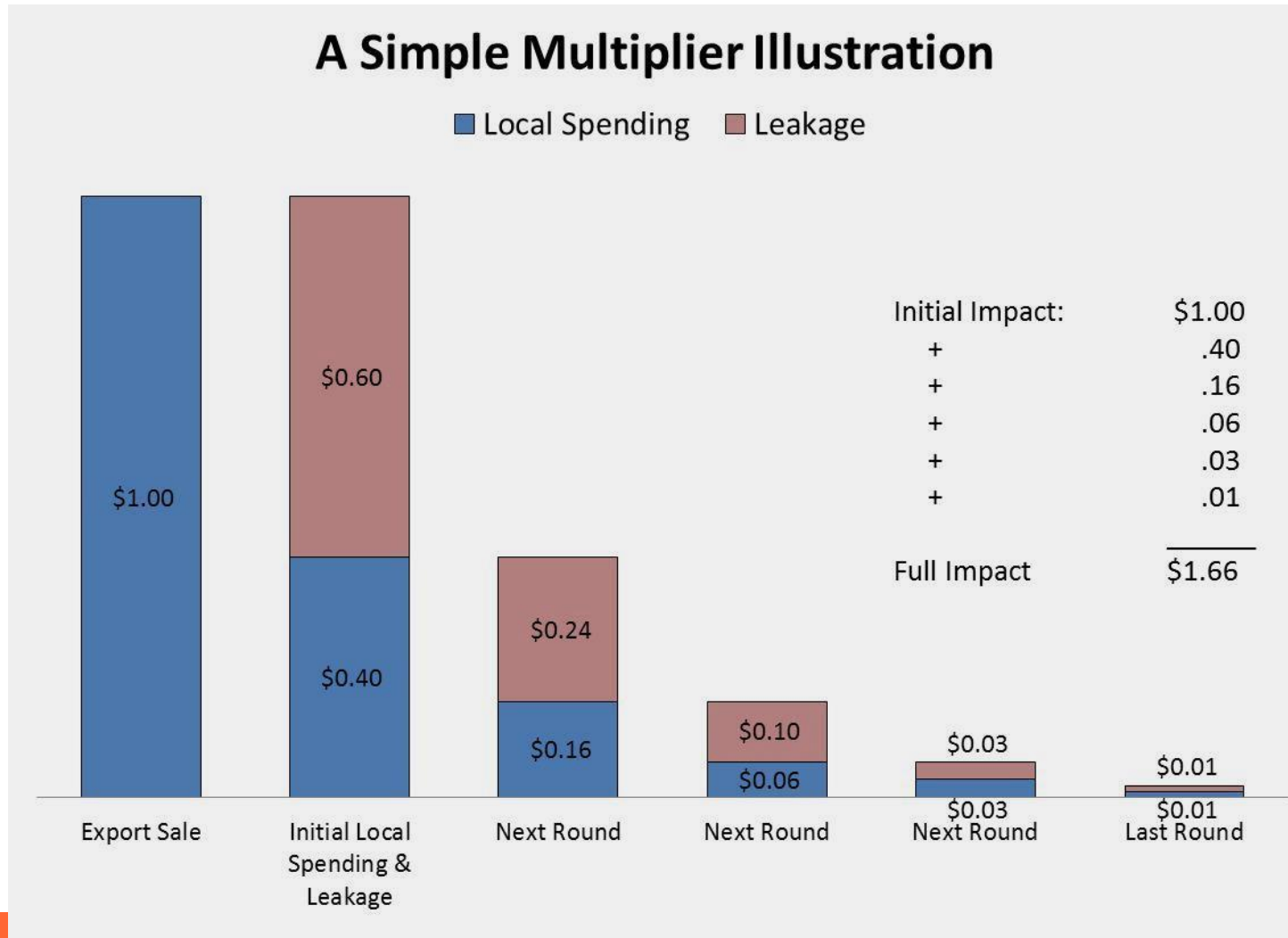   - Induced impact: $2.41 million

    - Total impact: $9.99 million
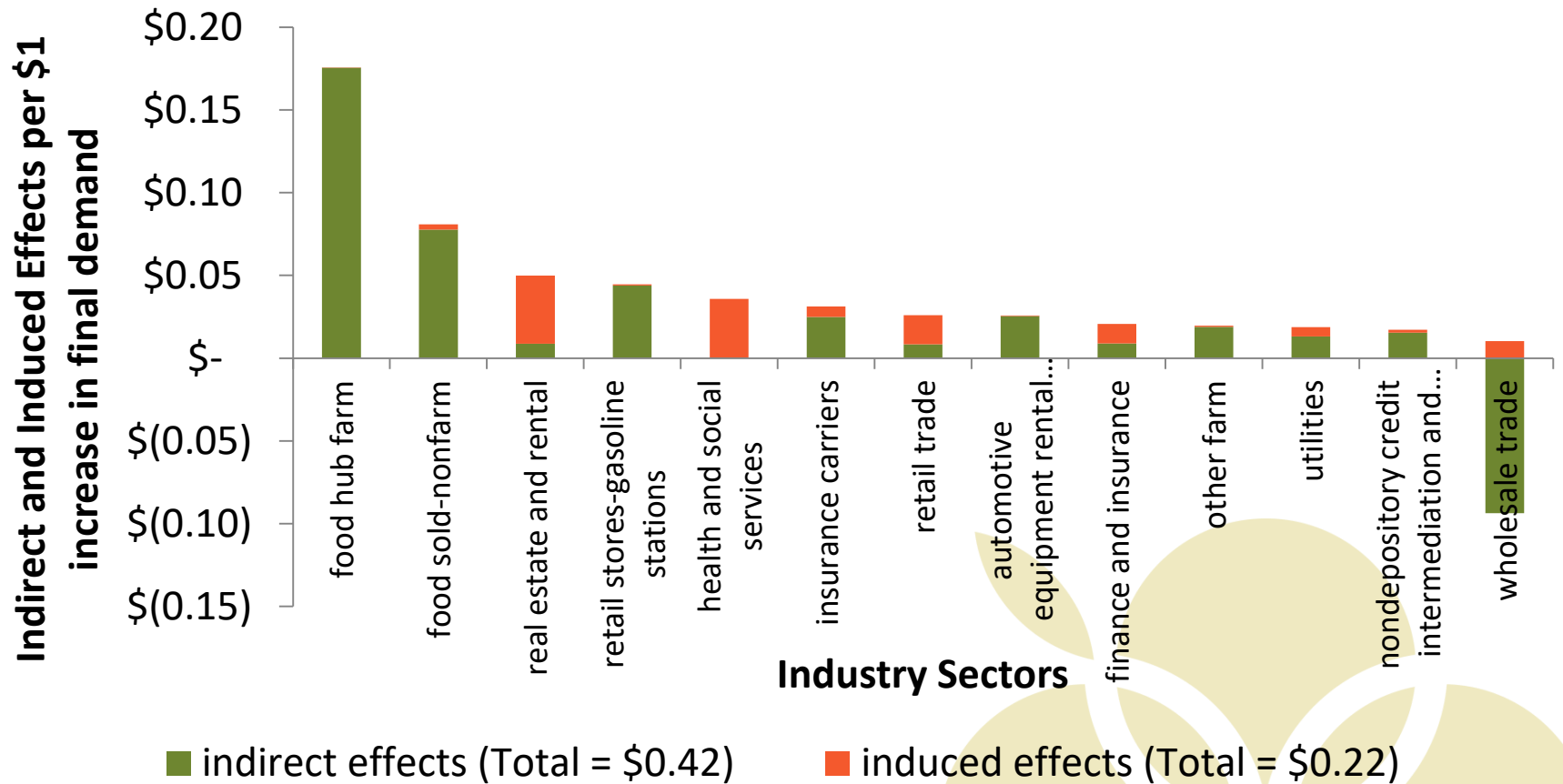
Multipliers (continued)

- **Multipliers capture "backwards" linkages.**

  – Based upon the existing economy, multipliers tell you how much additional production could be stimulated based upon the event's input needs.

  – It cannot forecast future demand for the product being produced.

  – Highly dependent upon the assumptions used!

    - Jobs created and their wage distribution

    - Event's use of locally produced inputs

    - Technology used by the event

A Visual Representation

A Simple Multiplier Illustration

Legend: Local Spending, Leakage

	Local Spending	Leakage
Export Sale	$1.00	
Initial Local Spending & Leakage	$0.40	$0.60
Next Round	$0.16	$0.24
Next Round	$0.06	$0.10
Next Round	$0.03	$0.03
Last Round	$0.01	$0.01

Initial Impact: $1.00
+ .40
+ .16
+ .06
+ .03
+ .01
___
Full Impact $1.66

Example of Industry Sectors Impacted by Increased Demand for Food Hub

Source: Jablonski, Schmit, and Kay 2016

Reliable Local Foods Impact Estimates

- **We use input-output (I-O) models to produce our multipliers:**

  – I-O models allow us to track the flow of transactions between local industries, sales by industries to households, and to other "final users" of goods or services (e.g., government).

  – They are specified for particular geographies.

  – Most analysts use IMPLAN (IMpact Analysis for PLANning) for their I-O analysis because of its ease of operation, transparency, and modifiability.

Finally, Properly Defining the Study Area

- **The study area is the boundaries of the "local" or regional economy you intend to study.**

- **Determining what constitutes local can have a decisive impact on the results: the larger the definition of local, the more inter-industry linkages exist.**

- **To isolate the effects of an impact, create as small a study area as possible, while still including the areas necessary to capture all of the important effects.**

  - It is rare that a sub-county area has the characteristics of a functional economic area. It is usually recommended that a county should be the smallest unit of analysis.
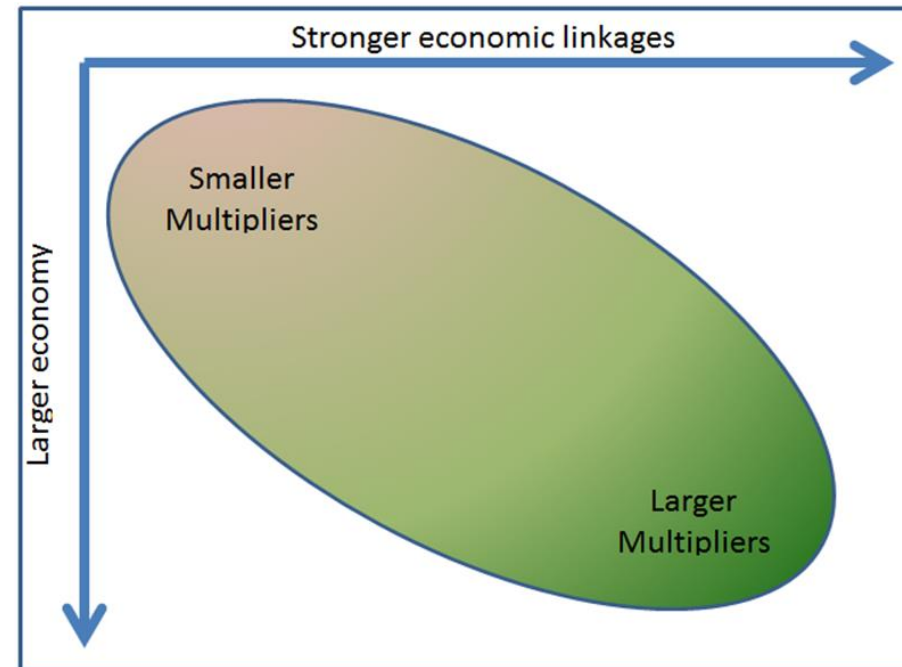
Finally, Properly Defining the Study Area

- **Elements to consider:**
  - Availability of secondary data for your region.
  - Geographic area of the majority of assessment team members.
  - Location of labor force.
  - Target audience:
    - Project funded by a State agency, defining local food by State is appropriate.
    - Assessing the impact of an initiative or policy is to participating producers, defining your study area based on the locations and distribution patterns of the participating farms is appropriate.

- **Functional (and defensible) market area is critical to a valid analysis.**

- **Multiple study areas show the range of potential impacts.**

A 'good' study

WHAT TO LOOK FOR WHEN REVIEWING LOCAL AND REGIONAL FOOD SYSTEM ECONOMIC IMPACT ASSESSMENTS

MODULES 6 AND 7

What does a 'good' study look like?

- **Good data.**
  - Model reflects the conditions in the field.

- **Sound assumptions.**

- **Careful reflection of how economic sectors interact.**
  - Can you identify any offsetting effects a positive shift in local foods may have on other sectors?

Good Data

- **Adapting your I-O Model:**
  - Evidence that farmers and value-added businesses interact differently with the local economy than more commodity-oriented businesses.
  - Evidence that these value-added businesses purchase a greater share of their inputs locally (by definition).
    - e.g., Food hubs, local food aggregation and distribution businesses.

Model Reflects Reality

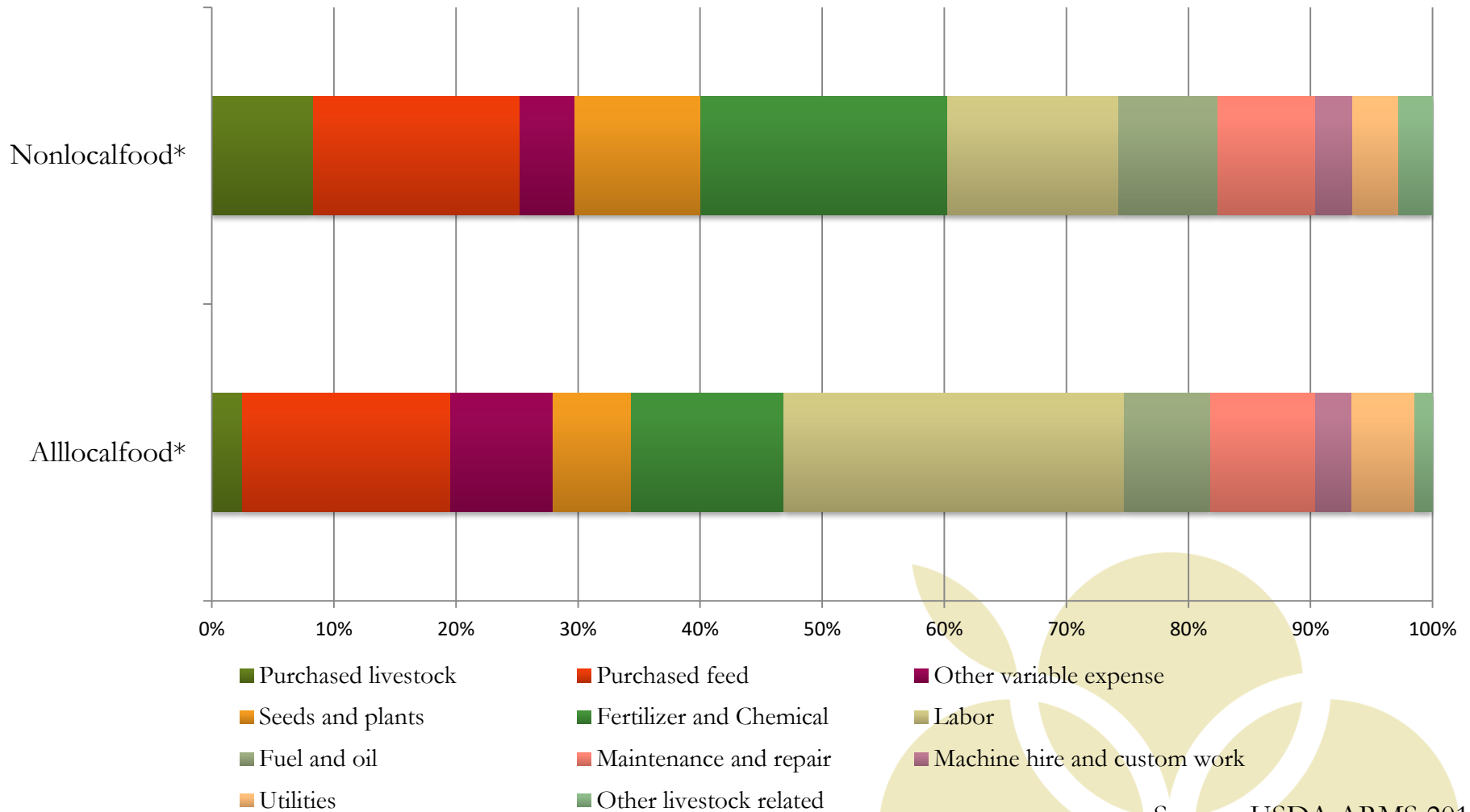- **Local food system producers have different expenditure patterns.**

Source: California Tomato Machinery

Red Fire Farm, Cherry Tomato Harvest.
Source: Emily Shannon, Formaggio
Kitchen Cambridge

Good Data

Source: USDA ARMS 2013

Good Data

Legend:
- Purchased livestock
- Purchased feed
- Other variable expense
- Seeds and plants
- Fertilizer and Chemical
- Labor
- Fuel and oil
- Maintenance and repair
- Machine hire and custom work
- Utilities
- Other livestock related

Source: USDA ARMS 2013

IMPLAN Baseline Info

- **IMPLAN data comes primarily from national sources – e.g., BEA, Ag Census.**

- **Each IMPLAN industrial sector represented by a single, initially-fixed expenditure pattern.**

  – 14 agricultural sectors, ex: fruit farming

Good Data

- **Normally need to augment available data by collecting information from the food system businesses.**

  – Goal of the primary data collection is to come up with an average local food farm/business expenditure profile --not an easy task.

- **Important to ensure that such surveys are as representative of the targeted local producer or processor population as possible.**

  – Surveys of convenience, like a select sub-set of program participants or advocates, likely will not adequately document operational costs fully and can lead to economic distortions when those data are run through input-output models.

Good Data

- **With data collection, don't just need to know *what* the producer/business purchases, but also *where*!**

Table 1 - Income Statement

| Income		
Sale of Crop Products	$	50,000
Sale of Livestock Products	$	25,000
Government Payments	$	10,000
Total Income	$	85,000
Expenses		
Seed	$	10,000
Fertilizer	$	20,000
Feed	$	10,000
Processing	$	10,000
Marketing	$	5,000
Interest	$	5,000
Depreciation	$	10,000
Total Expenses	$	70,000
Net Income	$	15,000

Sounds Assumptions

- **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.**

Examining Net vs. Gross Impacts

- ***The no resource constraints* assumption on the supply side–**

  - i.e., gross gains in local food production must be balanced against the fact that these shifts (referred to as **countervailing effects**) will usually come in the form of a direct, acre-by-acre reallocation of existing uses of agricultural land –

- ***The no opportunity cost of spending* assumption on the demand side –**

  - i.e., farmers directly marketing their crops constitute a positive local economic impact, but there may also be negative impacts due to the opportunity cost of lost direct sales activity in other sectors of the economy (the wholesale and retail sectors).

Sound Assumptions

Competition for Vendors at Farmers Markets

Source: Lohr and Diamond 2011
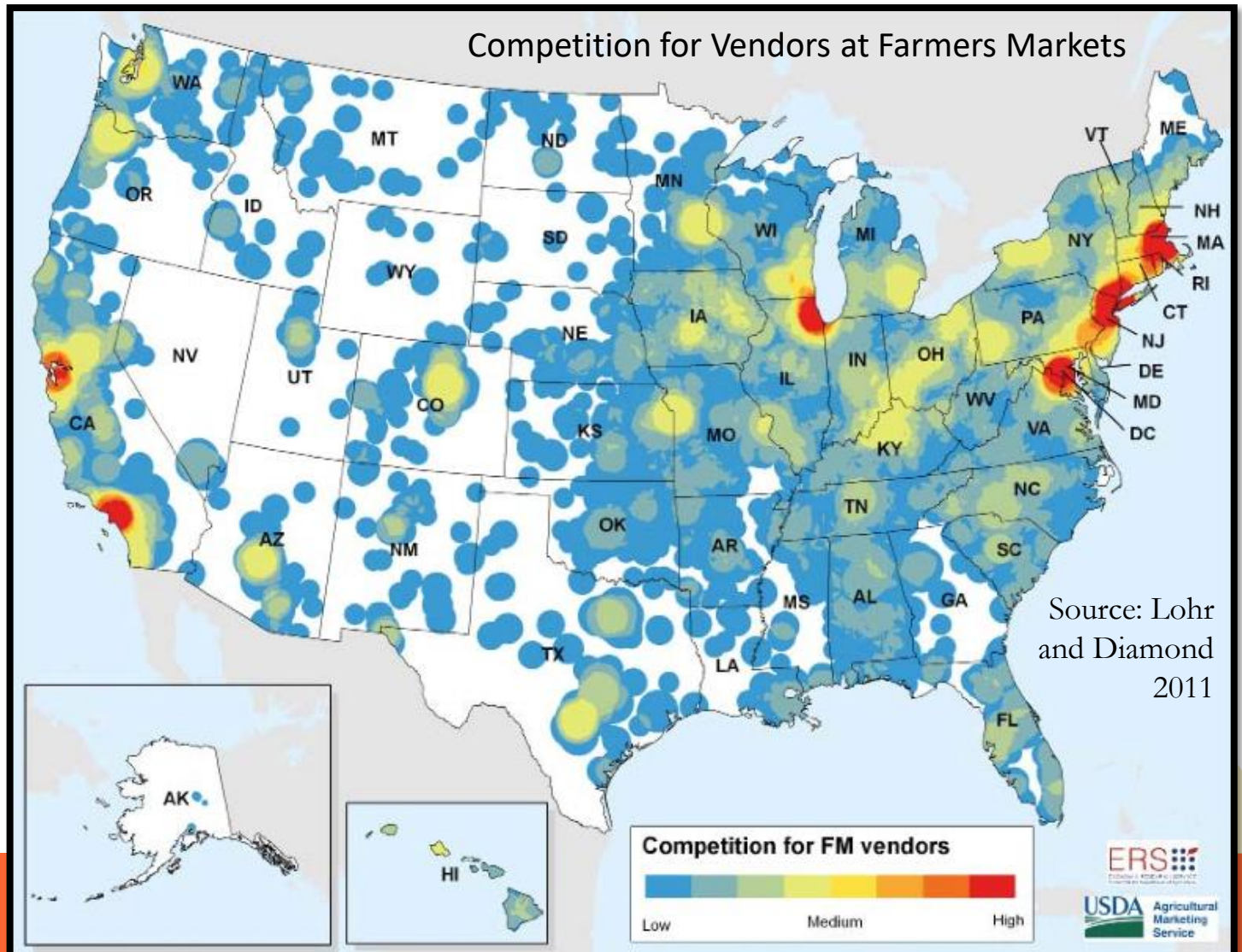
Concerns about Overestimation

- **Since economic impact numbers will be smaller when opportunity costs are considered or included, it can be challenging from a political standpoint.**
  - Larger numbers may help to 'sell' projects, but results are less defensible.
  - But, we believe it is a valuable practice to adopt more standardized approaches, offer good examples of how opportunity cost adjustments can be incorporated, and learn from previous rigorous examples to support your modeling refinements.

Key Takeaway

- **Local food systems have different community linkages that elicit economic impacts. We can measure those differential impacts, but requires a thoughtful approach – including diverse community stakeholders, resources, and expertise.**