



TOOLS FOR ASSESSING ECONOMIC IMPACT:

A Primer for Food System Practitioners

September 19, 2017

MICHIGAN STATE
UNIVERSITY

Center for
Regional Food Systems

INTRODUCTIONS



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Upper Peninsula Research and Extension Center



POLL 1

Please indicate which category best describes your job or personal affiliation.

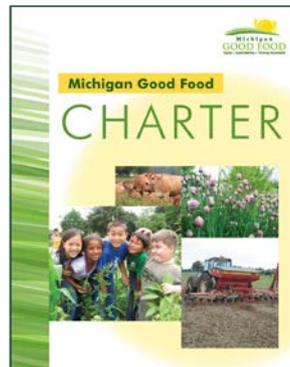
- 1. Community educator, extension agent**
- 2. Community member, advocate**
- 3. Food system practitioner –grow, process, sell or prepare food**
- 4. Funder**
- 5. Non-profit professional**
- 6. Policy maker, state or local government employee**
- 7. Researcher, university faculty**
- 8. Student**
- 9. Other**

POLL 2

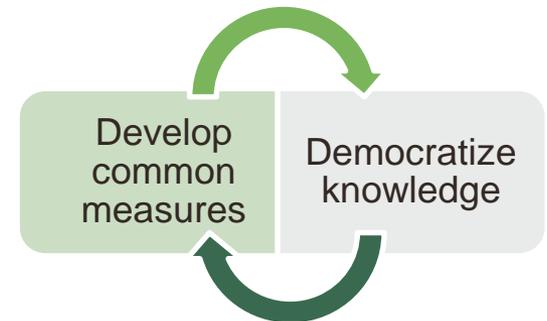
What is your level of experience with economic impact assessments?

- 1. Very familiar**
- 2. Somewhat familiar**
- 3. Not familiar**

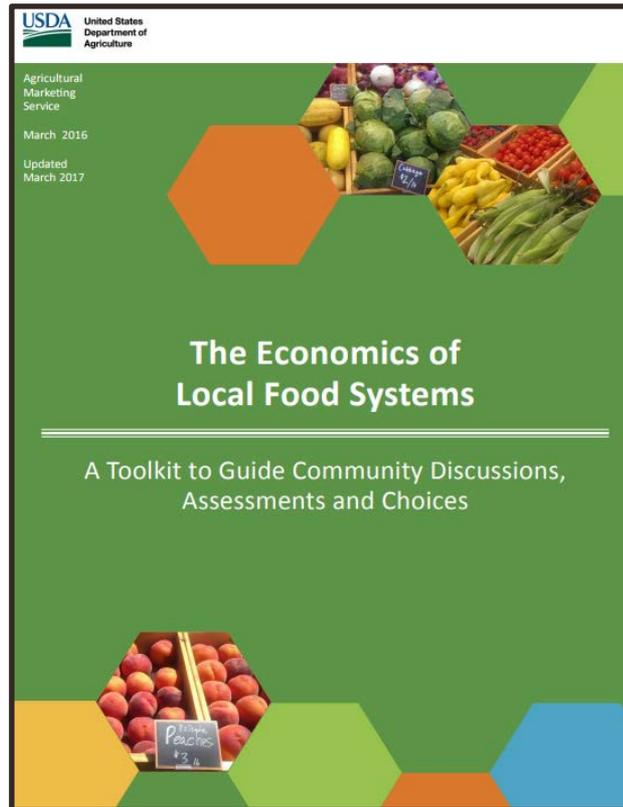
SHARED MEASUREMENT



Writings of
John Kania and
Mark Kramer



BUILDING CAPACITY TO UNDERSTAND ECONOMIC IMPACTS



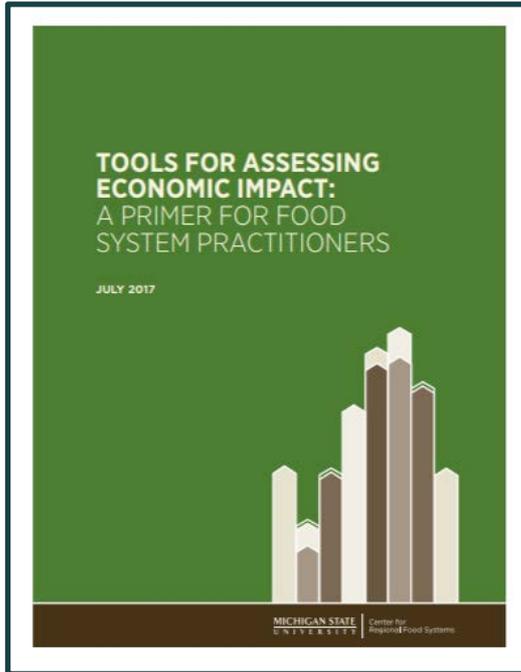
USDA Toolkit: The Economics of Local Food Systems

- Planning and designing an economic impact assessment
- Technical guidance for conducting an economic impact assessment in IMPLAN
- Case studies, webinars and other resources
- <https://localfoodeconomics.com/>

Overview webinar:

http://foodsystems.msu.edu/resources/evaluating_economic_impacts_of_local_and_regional_food_systems

NEW GUIDE → TODAY'S WEBINAR



- Introduces concept of economic impact
- Summarizes range of tools available
- Standard commercial models
- Community-based approaches
- Example studies
- <http://foodsystems.msu.edu/resources>

Today's Webinar → **What is an EIA?**
Tools available
Example EIA



WHAT IS AN EIA?

Considerations for Food Systems Practitioners

Megan Phillips Goldenberg
New Growth Associates

New Growth Associates

WHAT IS AN EIA?

- **E**conomic
- **I**mpact
- **A**nalysis

A quantitative approach to evaluating a *change* in the economy.

I DON'T KNOW HOW
TO DO STATISTICS BUT
IT DOESN'T MATTER
BECAUSE I DIDN'T
HAVE DATA.





CHANGE, SCENARIO, SHIFT, SHOCK

Without a **change**, there is no impact to assess

Change can be real or hypothetical

- Increase consumer spending on locally produced foods by 10%
- Argus Farm Stop grossed \$1 million in sales and created 16 jobs in 2014

Industry experts refer to this as a “**shock**”

Ann Arbor Food System + Argus Farm Stop = *Increased local food sales*



EIAs QUANTIFY:

ECONOMIC GROWTH- an increase in output

- Jobs
- Income
- \$\$\$

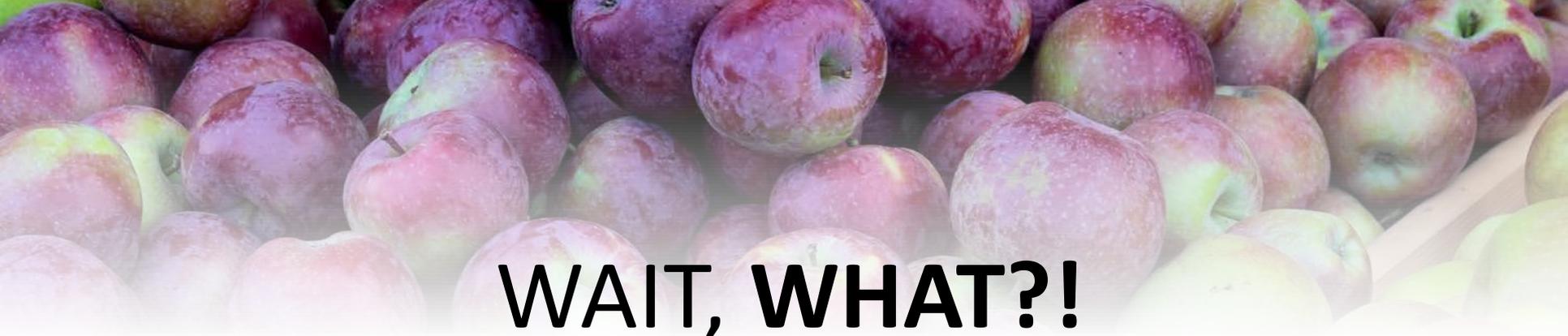
***NOT* ECONOMIC DEVELOPMENT...**



EIAs **DON'T** QUANTIFY:

ECONOMIC DEVELOPMENT- an increase in quality of life indicators

- Increased sales of healthy foods in low-income, low-access neighborhoods
- Jobs with living wages
- Community connectivity and social capital
- Increased school attendance and behavioral outcomes



WAIT, WHAT?!

Local food systems work is often motivated by a set of values and goals – **increasing access to healthy foods, preserving farmland, creating artisanal entrepreneurial opportunities, connecting kids with food** – that are more in line with economic development strategies, not economic growth.

BUT...



DOLLARS AND CENTS ARE A COMMON LANGUAGE

(and values are not)



EIAs ARE..

USEFUL FOR

- Quantifying economic growth – dollars and jobs
- Comparing investment scenarios
- Evaluating ripple and spillover effects

NOT USEFUL FOR

- Feasibility studies
- Business planning
- Market demand
- Health, environmental, social impacts
- Longitudinal inquiries
- Total economic value



TWO CLASSIFICATIONS OF ANALYSIS

COMMERCIAL

- RIMS II
- IMPLAN
- REMI

COMMUNITY BASED

- LM3
- SNA
- FFFC



COMMERCIAL COMMONALITIES

All based on **INPUT – OUTPUT (IO)** modeling

All sectors of an economy are linked – the outputs of one sector are inputs to another sector

Almost all are **BACKWARD LINKING**

They only capture the impacts **AFTER** a change in the supply chain, aka the upstream effects of a shock

Almost all at least track **DIRECT, INDIRECT, and INDUCED** effects

All based on **SECONDARY DATA**



INPUT – OUTPUT

**Carrots grown
on the farm**

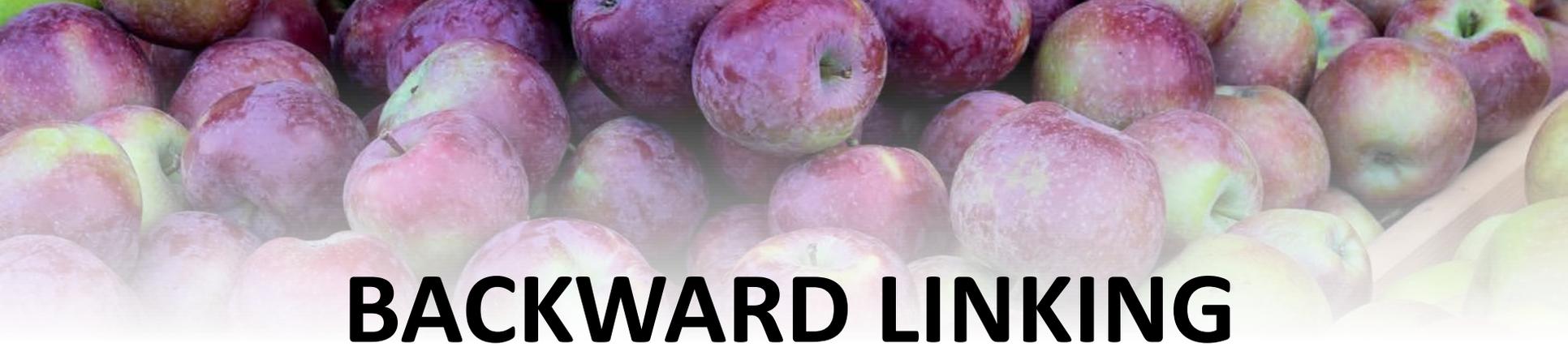


**Carrots washed,
peeled, cut,
and bagged
at food hub**



**Carrots served
at school lunch**





BACKWARD LINKING

from “School buys local food”

**Carrots grown
on the farm**



**Carrots washed,
peeled, cut,
and bagged
at food hub**



**Carrots served
at school lunch**



Carrots grown on the farm



Carrots washed, peeled, cut, and bagged at food hub



Carrots served at school lunch



DIRECT

INDIRECT

School starts buying from Food Hub



Food Hub buys more carrots



Farm hires more people



Farm workers buy more groceries, gas, medical supplies, etc.

INDUCED



Food Hub hires more people



Food hub workers buy more groceries, gas, medical supplies



COMMUNITY-BASED APPROACHES

Self directed and/or community led

Based on primary data

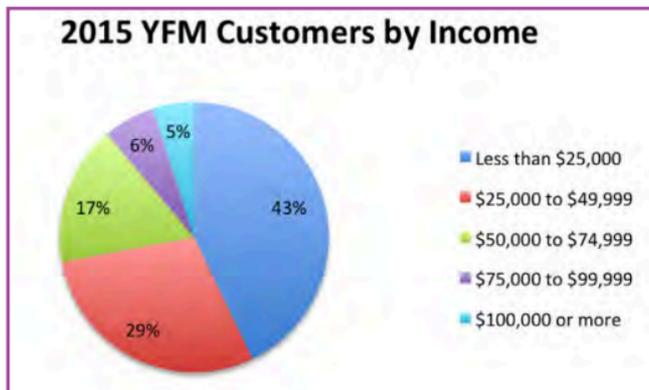
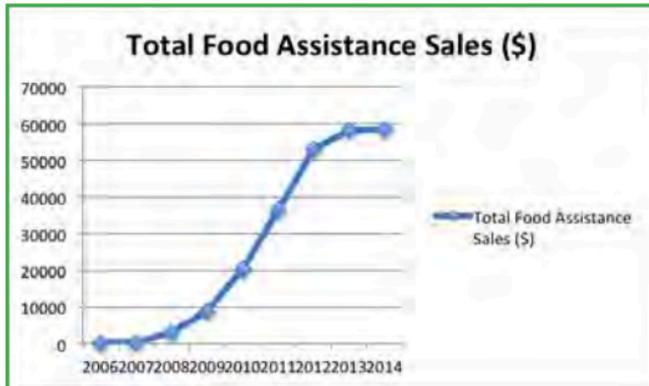
You are already doing this:

“Argus Farm Stop grossed \$1 million in sales and created 16 jobs in 2014”

Where We're Going

Prioritizing Food Access, Diversity, and Community

Our Ypsilanti Farmers Markets prioritize creating a diverse community space that satisfies food access needs of our lowest income and lowest access residents. We are so grateful for the opportunity to build community and create an accessible, inclusive and welcoming space in Downtown Ypsilanti. According to these indicators, we are doing something right!



83%
of customers rate our
quality of products **Very
Good or Excellent**

72%
of customers report
having to travel less
than 5 miles to get to
our farmers markets

**More than
25%**
of customers report
walking or using a
wheelchair to get
to the
farmers market

**More than
77%**
of customers are more
likely to tell others good
things about Ypsilanti
as a result of the
farmers market

**More than
73%**
of customers agree
the farmers markets
have increased their
household's access to
fresh, healthy food

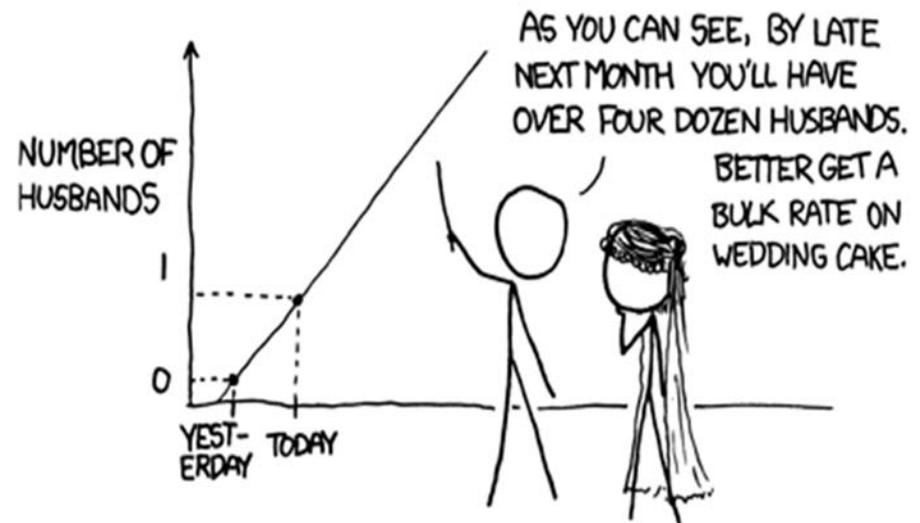
LIMITATIONS AND CAVEATS

NONE of these approaches are perfect, or even accurate

Food systems are particularly difficult to model

The more accurate you want the data to be, the more money and time it will take

MY HOBBY: EXTRAPOLATING

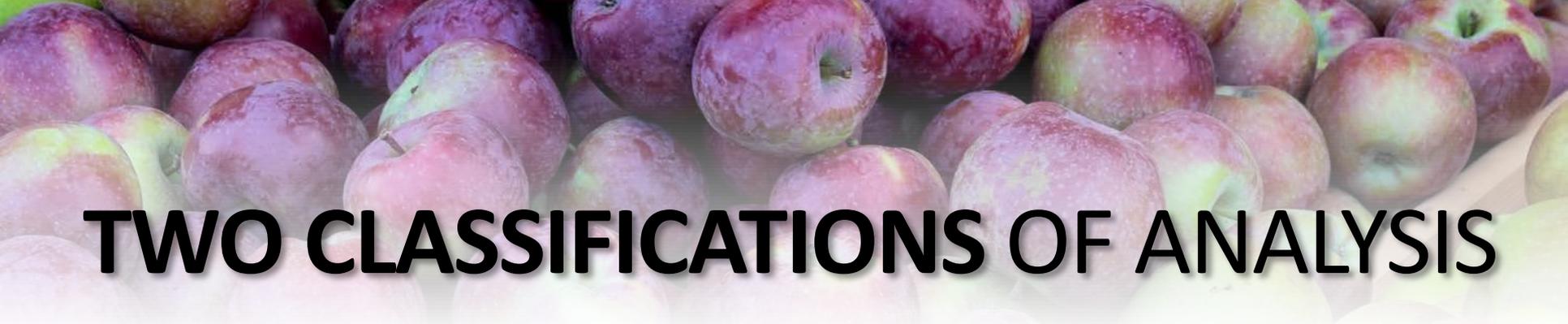




SPECIFIC MODELS

ECONOMIC IMPACT TOOLS SUMMARY TABLE

TOOL & DESCRIPTION	MOST APPROPRIATE USES
<p>RIMS II (Regional Input-Output Model System)</p> <ul style="list-style-type: none"> • Linear I-O (input-output) model • Spreadsheet based <p>bea.gov/regional/rims/rimsii/</p>	<ul style="list-style-type: none"> • Comparisons across regions, or comparing one industry to another • Scenarios when no customization is needed • Lends basic insights to relative industry strengths and connectivity • Projects with limited resources
<p>IMPLAN (Impact Analysis for Planning)</p> <ul style="list-style-type: none"> • Linear I-O (input-output) model • Web-based interface, exports to spreadsheets <p>implan.com</p>	<ul style="list-style-type: none"> • Large region or state level economic impacts at a single point in time • Comparing one industry to another, one region to another, or one investment to another • Evaluations of well-established industries • Projects with moderate budgets and existing baseline data • Analyses by professional economic modelers
<p>REMI (Regional Economic Models, Inc.)</p> <ul style="list-style-type: none"> • ESM (economic simulation model) • Software based <p>remi.com</p>	<ul style="list-style-type: none"> • Multi-factor scenarios with price changes, migration, investment, constraints on inputs, etc. • Tracking the effects of a shock over time • Projects with large budgets for evaluating the impacts of really large investments or infrastructure projects • Analyses by professional economic modelers



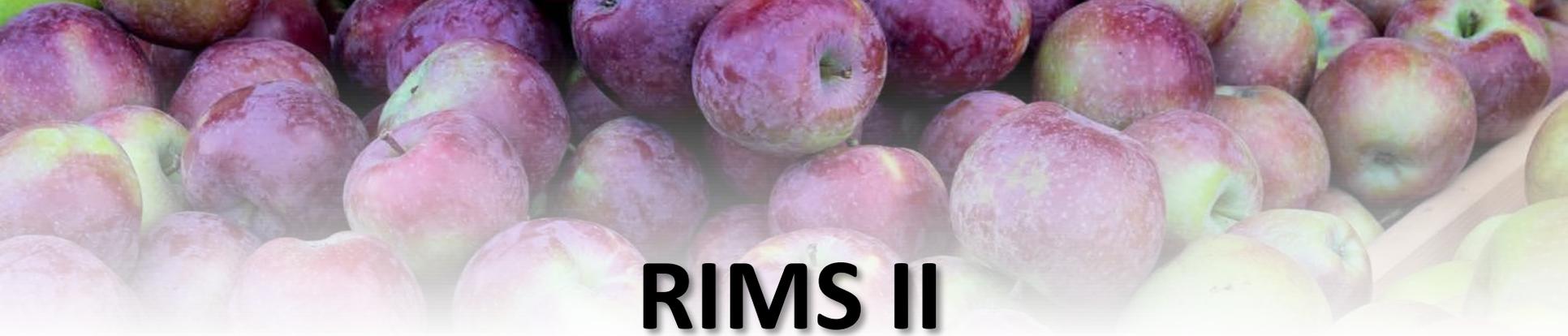
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RIMS II

Regional Input – Output Modeling System

- The **MOST BASIC** commercial model available
- Affordable, transparent
- Based on national benchmark data collected by US BEA
- Appropriate for “ball park” estimates
- Good at comparative analysis across geographies
- Not customizable
- No “black box” effect



IMPLAN

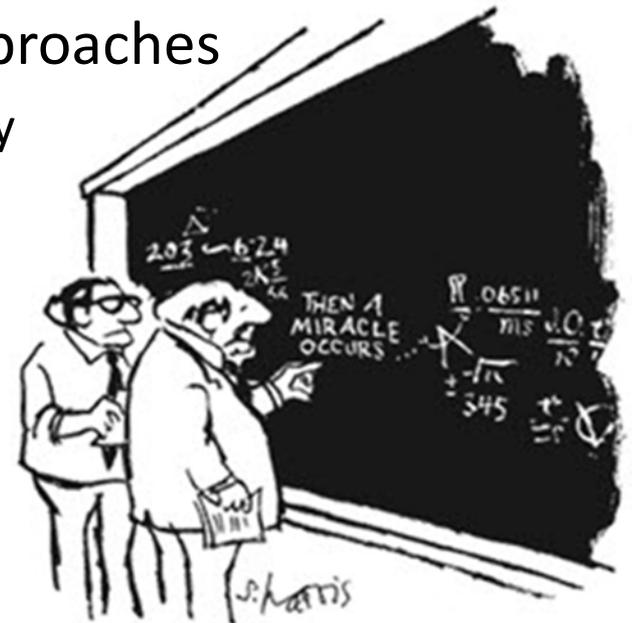
IMpact Analysis for PLANning

- The **MOST COMMONLY** used model
- Relatively affordable and straightforward
- Highly customizable
- Mix of national, regional, and local level data
- Updated data released regularly
- Can be a “black box”
- Extensive amount of resources available:
<https://localfoodeconomics.com/toolkit/resources/>

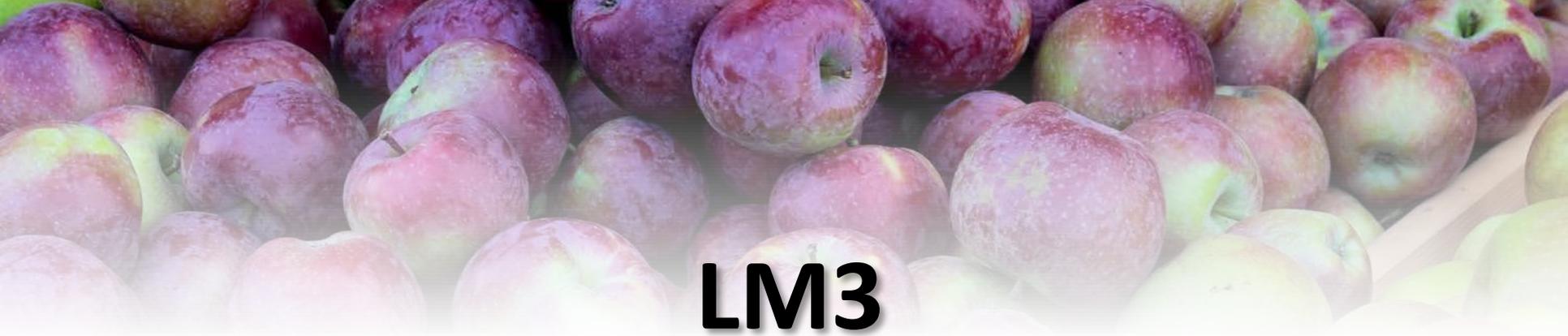
REMI

Regional Economic Models Inc

- Combines several economic modeling approaches
 - I-O + CGE + Econometrics + Economic Geography
- Much more dynamic than other models
- Difficult to customize with primary data
- The blackest “black box”
- Expensive and only for experts



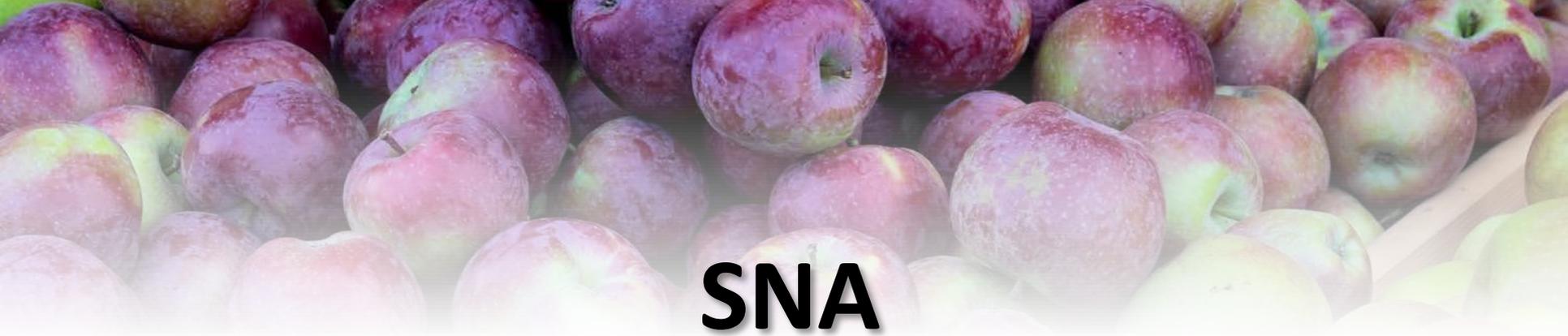
"I THINK YOU SHOULD BE MORE EXPLICIT HERE IN STEP TWO."



LM3

Local Multiplier 3

- Exclusively based on primary data collection
- Reflects Input-Output model principles
- Limited to community efforts, resources, and willingness
- Very transparent
- New Economics Foundation provides extremely affordable support materials
- Not widely used in the United States, but is used in the U.K.



SNA

Social Network Analysis

- A theoretical application of social capital principles to economic impact
- Based on the idea that economic impacts are greater as local businesses do business with each
 - # of businesses and strength of those relationships = dollars
- Not a codified methodology
- Only model (referenced here) that also addresses economic development to some extent



FFFC

Finding Food in Farm Country

- A variety of secondary data and primary data
- Not an economic impact analysis, but instead a summary of economic data
- More of a “snapshot” approach
- Customizable and transparent



WHAT MAKES A “GOOD” STUDY?

- One that ***serves your purposes and your community***
- Historical and/or baseline primary data
- Being clear about your mission, goals, and expectations of the study
 - Who cares about your study? How will they use the information?
- Clear boundaries- timeline, resources, scope
- A representative steering committee



THANK YOU

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New Growth Associates

Pure Brews

*Determining the economic impact of the
hop and barley industries in Michigan*

Ashley McFarland

MSU Extension & AgBioResearch

Michigan Craft Beer

- Nearly 300 breweries
- \$1.85 billion dollar industry
- Consistent growth within Michigan and through distribution

**DRINK
MICHIGAN
BEER**

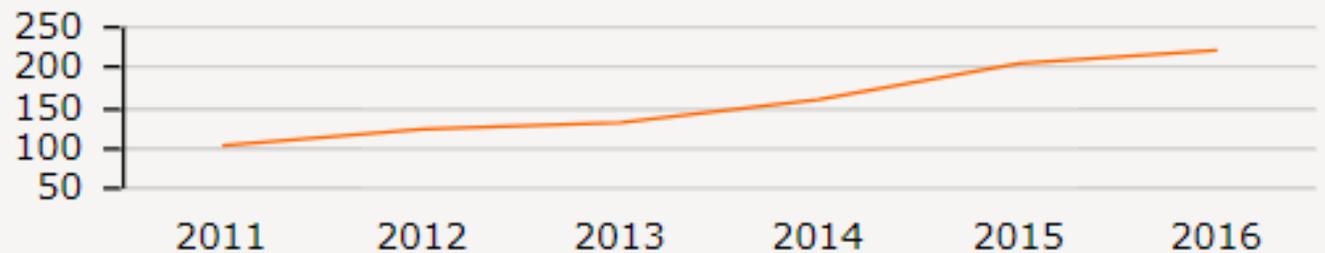




3.1 Breweries per Capita*
 (RANKS 15TH)
 *per 100,000 21+ Adults



NUMBER OF BREWERIES PER YEAR



Michigan State Engagement

- History working with the hop (2007) and malting barley (2013) industries
- Collaboration with the Michigan Brewers Guild
- Annual Great Lakes Hop and Barley Conference

Rationale

- Enhanced competitiveness on the national market
- Improved opportunity for funding
- Relevancy and legitimacy within Michigan agriculture

Research Questions

- What is the current economic impact of Michigan-grown ingredients (hops, malting barley) in Michigan craft beer?
- What is the potential economic impact of Michigan-grown ingredients (hops, malting barley) in Michigan craft beer?
 - Assumption: IF 50% of Michigan craft beer used Michigan-grown ingredients

Challenges

- Tracking four industries; 2 raw ingredients, 2 value-added products
- Fitting non-traditional industries into “traditional” economic models
- Sourcing data
- Defining metrics
- Barley “lag”

Lessons learned

- Not necessarily wise to lump industries
- Too soon?
- Need to bridge the communication gap between economists and field practitioners
- Advisory groups are crucial

Redirecting efforts

- Separating industries
- Two reports; one with strict assumptions, the other more open
- Capturing exports as well
- Highlighting need for streamlined data collection

Partners

MICHIGAN STATE
UNIVERSITY

AgBioResearch



Department of
AGRICULTURE
& Rural Development

MICHIGAN STATE
UNIVERSITY

Extension



New Growth Associates

Thank You

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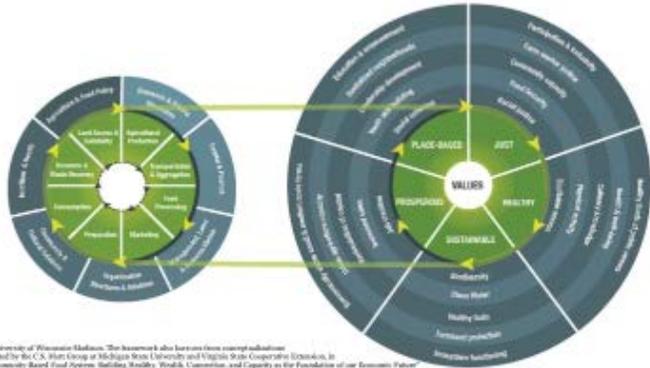




THANK YOU!

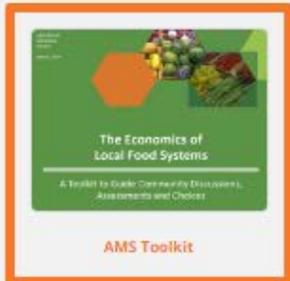
Questions? Comments?

A Community of Practice to help you and your community understand the ag and food enterprise viability, market dynamics and other key socio-economics metrics of local and regional food systems.



The University of Wisconsin-Madison. The benchmark also borrows from several publications prepared by the U.S. Meat Animal Research Center, University of Missouri and Virginia State Cooperative Extension. In "A Community Based Food System: Building Resilient, Healthy, Wealthy, Connected, and Capable as the Foundation of our Economic Future" Benbrook, K.S., N. Walker, J. Bunn, L. Martin, and M. Aronow. May 2011.

PROGRAMS AND INITIATIVES



AMS Toolkit



Farm to School



Benchmarks



Farmers Market Metrics



Rural-Urban Linkages



Community Supported Agriculture

eXtension CLRFs committee on local food economics: localfoodeconomics.com

- Support provided by USDA AMS Toolkit project
- 10/11 webinar on Evaluating the Economic Impacts of Farm to School
- Will be revising website – featuring related projects and case studies
 - Please contribute relevant work to the website!

GET IN TOUCH & LEARN MORE



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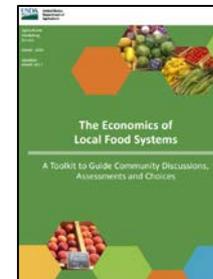


Tools for Assessing Economic Impact

www.foodsystems.msu.edu/resources



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USDA Toolkit: Economics of Local Food Systems

www.localfoodeconomics.com



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