

Extension



Chuckie Hessong



Not Your Average High Tunnel Project











Partners: K-State Research and Extension, Live Well Crawford County, Crawford County Commissioners, City of Pittsburg, Southeast Kansas CTEC (Career and Technical Education Center), Wesley House



Fransdisciplinary Feam Approach



Wildcat Extension LEGS

Local-Eat-Grow-Sustainability

	Писакана	Data	Location
_	Program	Date	Location
	What's the Scoop on Poop? - Soil Fertility Basics	April 27	High Tunnel: C-TEC, 1301 E 27th Terrace, Pittsburg
6	Food Preservation 101 (Pre-requisite for Salsa and Pressure Canning classes)	May 18	Pittsburg Public Library, 308 N Walnut, Pittsburg
2	Mites, Blights and Parasites- Common Garden Problems and Solutions	May 22	High Tunnel: C-TEC, 1301 E 27th Terrace, Pittsburg
H	Preserving Salsa	June 22	Wesley House, 411 E 12th, Pittsburg
	Not Too Much or Too Little- Irrigation Basics and Fall Gardening	June29	High Tunnel: C-TEC, 1301 E 27th Terrace, Pittsburg
4	Pressure Canning	July 13	Wesley House, 411 E 12th, Pittsburg
	Utilizing the Harvest	August 3	CR County Fair Grounds, Marvin Green Building
2	Beekeeping	August 3	CR County Fair Grounds, Marvin Green Building
	Grants	August 31	Pittsburg Public Library, 308 N Walnut, Pittsburg
	Entrepreneurship	September 21	Pittsburg Public Library, 308 N Walnut, Pittsburg
	Late Season Salads- Extending High Tunnel Production	September 28	High Tunnel: C-TEC, 1301 E 27th Terrace, Pittsburg
	Business Plans	October 26	Pittsburg Public Library, 308 N Walnut, Pittsburg

Agriculture Team

- Hands-on and off-site learning opportunities
- Connect youth to agriculture
 - Challenger Program
 - Public School Systems
 - 4-H Youth Development
- Subjects: soil fertility, common gardening problems, irrigation basics, beekeeping, extending high tunnel production
- Harvesting/storing produce
- Wesley House connection
- Horticulture Certificate Program



Family and Consumer Sciences/EFNEP

- Food preservation 101 (pre-requisite for salsa and pressure canning)
- Preserving Salsa
- Pressure canning
- Utilizing the harvest
- Late-season salads

Wesley House/Farmer's Market Healthy Recipes Demos



Community Vitality/Financial Management & Entrepreneurship

- Grants
- Entrepreneurship
- Business Plans
- Follow up requests
 - Small Business, Big Ideas
 - Farm Tour
 - ► Grant Workshops





Project Transition

- High Tunnel ownership transferred to Southeast Kansas CTEC.
- Plant Science Courses Horticulture Certificate Program



K-STATE Research and Extension

4-H GARDENING INSTITUTE

March 11 - Fredonia March 12 - Parsons March 13 - Independence March 14 - Girard

9:00am - Introductions 9:05-9:25 - Soil and Fertilizer (James Coover) 9:30-9:50 - Composting (Jeri Geren) 9:50-10:05 - Break 10:05-10:25 - Garden Pests (Jacob Weber) 10:30-10:50 - Garden Tools & Tips (Jacob Weber) 10:50-11:00 - Pumpkin Contest 11:00 - Final Q&A's

PLEASE RSVP TO YOUR LOCAL EXTENSION OFFICE BY MARCH 6.

Results of Pilot Program









Factors Influencing Fruit and Vegetable Farmers' Willingness to Participate in Market Outlets with a Food Justice Mission: The Case of Fresh Stop Markets

Margarita Velandia, Xuqui Chen, Jaqueline Yenerall, Susan Schexnayder, Carlos Trejo University of Tennessee

> Keiko Tanaka, Heather Hyden, Karen Rignall University of Kentucky







Background

- In the US, low-income households tend to eat less nutritious diets when compared to higher-income households (USDA, ERS).
- US low-income are more likely to have challenges associated with **food access**, budget allocation, time to prepare healthier foods, and perceptions of affordability of healthier foods (USDA, ERS).
- Fresh Stop Markets (FSM) is an example of a market model aiming to increase access to local, fresh, healthy foods in food-insecure neighborhoods in KY.

What are Fresh Stop Markets (FSM)?



FSM pop up every two weeks during the growing season, June-November, at churches, businesses and community centers. Shareholders pay on an income-based sliding scale, two weeks before each pick up date. Each bag contains nine varieties of fresh, local, mostly organicallycertified vegetables and some fruit: \$6 if paying with SNAP; \$12.75 for limited resources; \$27 for higher income; and, \$43 for Food Justice Shares. Everyone gets the same bag regardless of what they pay.



Farmer Survey

- <u>Objective</u>: Evaluate fruit and vegetable farmers' willingness to sell produce through Fresh Stop Markets (FSM).
- <u>Data:</u> Contact list of 961 farms obtained from PTP program and TN Ag Enhancement program for TN farms, and KY Proud program for KY farmers. Survey was sent to farmers in East TN (32 counties, including Knox County), and the Lexington, and Louisville KY area (14 counties).
- <u>Survey:</u> We used a mix-mode survey (Web and mail survey versions). Web version— sent to 245 TN farms between February and March 2020. Mail version sent to 716 farms (KY and TN farms which had not completed web version by April or did not have an e-mail address); 161 responses were obtained for a 17% response rate.
- <u>Survey design</u>: Includes 22 to 27 questions depending on respondent selections (food justice, WTP in FSM, market outlets, farmer and farm business characteristics).

Activities related to the food justice mission (n=161)



Summary Statistics

Variables	Mean	Min	Max
Farm gross revenue < \$25,000	0.6410	0	1
> 25% of income from farming	0.5901	0	1
Household income <\$100,000	0.6779	0	1
Acres in F&V	7.1776	0.06	60
Total acres in production	47.0264	0.06	1500
Selling produce at FM	0.4845	0	1
Selling produce through CSAs	0.1366	0	1
Selling produce to restaurants	0.1118	0	1
<10% of produce donated to charity	0.7586	0	1
Age	56.2432	27	89
Bachelor or graduate degree	0.6218	0	1
Farm located in KY	0.6121	0	1

Q9.1. Would you be willing to sell produce through Fresh Stop Markets if: Prices paid are **25% below retail prices** (e.g., Farmers' Markets). You can sell up to **30% of your produce** through this market outlet.



Q9.2. Would you be willing to sell produce through Fresh Stop Markets if: Prices paid are **30% below retail prices** (e.g., Farmers' Markets). You can sell up to **30% of your produce** through this market outlet.

Yes
Please go to Q10
No
Please go to Q13

Q9.3. Would you be willing to sell produce through Fresh Stop Markets if: Prices paid are **20% below retail prices** (e.g., Farmers' Markets). You can sell up to **30% of your produce** through this market outlet.



% of respondents WTS produce through FSM



Preliminary Regression Results

Variables	Coefficients	Marginal Effects
Farm gross revenue < \$25,000	0.5244*	0.1596
Bachelor or graduate degree	0.6652**	0.2024
Age	-0.0136	
Selling produce at FM	0.6694**	0.2037
Offer discounts to low-income families	0.1858	
Donate produce to Food Banks and/or other charities	0.3290	
Educational program	1.0662***	0.3244
Leaders or Volunteers in organizations with food justice mission	-0.6405*	-0.1949

QUESTIONS

	Questions
Place-based qualities of resilient community food systems	 What are the dimensions of a RCFS? a. What are the impacts to the supply chain of sudden, intermittent and long-term shocks? b. What are the necessary place-based qualities to make a community food system resilient? c. Who, or which organizations, holds the power to make change within RCFS?
Community actors attitudes towards resilient community food systems	How does community identity and resident knowledge relate to qualities of RCFS? a. Who are the community actors that assist in forming a RCFS? b. What are the perspectives of community members regarding what makes a RCFS? c. What are the attitudes of community residents that support and challenge RCFS?
Land-Grant University engagement within resilient community food systems	What are LGU-E's role in supporting RCFS? a. How are LGU-E engaged in RCFS? b. Do LGU-E services increase the ability for a community to establish RCFS? If so, how?

OBJECTIVES

	Objectives
Place-based qualities of resilient community food systems	 Describe the dimensions of RCFS and their place-based qualities related to Community Capitals Framework Assess if there are common characteristics of RCFS amongst different place-based communities that allow for response to sudden, intermittent and long-term shocks
Community actors attitudes towards resilient community food systems	 Identify common attitudes and perceptions of RCFS Compare values of residents that have experienced disaster that support and challenge RCFS
Land-Grant University engagement within resilient community food systems	 Determine current LGU-E's engagement in RCFS and potential roles in the future Understand the strength of relationships LGU-E has with community actors of RCFS

PLACE-BASED COMMUNITY



FOOD SYSTEMS



RESILIENCE

- Resilience is the capacity of a system to withstand shocks and external pressures while maintaining its basic structure, processes and functions.... Resilient systems have buffering capacity, which enhances their ability to adapt to changes, learn from past mistakes and recover from disturbances (Schipanski et. al, 2016, p. 601)
- Resilience focuses on increasing the ability of systems to adapt and change with little long-term loss of function or potential for growth (U.S. Economic Development Administration, n.d.)

COMMUNITY ECONOMIC DEVELOPMENT

- Understanding of community economic development practices and methods
- Through facilitative discussions, social capital development, ability to support resilience capacity for communities, including food systems.
- While CED practices and theories are critical to the understanding of the research, the ability to measure the success of CED practices does not appropriately align with the research study; rather, CED processes of facilitation, social capacity and collective action will be utilized as a method of the research.

RESILIENT COMMUNITY FOOD SYSTEMS

- Ability for a place-based community food systems to withstand shocks and pressures while maintaining basic structures, processes and functions of and within the supply chain and ensure continued access to food for community residents.
- Indicators:
 - Sustainable and sound infrastructure for distribution channels
 - Buffering capacity to withstand shocks within production practices, processing facilities, aggregation and distribution channels, and food retailer capacity
 - Leadership and social capital support for community food businesses and residents
 - Policy that supports bounce-back to normal practices

EXTERNAL ACTORS

- Government Departments
- Non-Government Organizations
- Colleges and Universities
- Political actors and associations
- Funders

LAND-GRANT UNIVERSITIES

- Each college and university are governed differently
 Morrill Act of 1862 = public Land Grant Universities
 - 1887: Hatch Act- Agriculture Research Stations
 - 1890: Historically Black Colleges
 - 1914: Smith Lever Act- Extension Services
 - 1994: Tribal Colleges and Universities
 - Current roles

HYPOTHESES

- 1: Place-based qualities that are most significant for RCFS are sound infrastructure, buffering capacity to withstand shocks throughout the supply chain, leadership and social capital within the community, and political support for returning to equilibrium.
- 2: Community residents that have relationships within their community and have experienced a disaster (natural or human-based) are more likely to support RCFS.
- 3: LGU-E can improve capacity for RCFS through technical assistance and community capacity support

METHODS AND DATA ANALYSIS

- Participatory Action Research
- Co-create knowledge and understand together





Figure 1: Sequential Exploratory Mixed Methods Design, formatted from Hesse-Biber, 2010 pg. 463

REVIEW: PLACE-BASED

	Questions	Objectives	Hypothesis	Who/ How/ Analysis
Place-based qualities of resilient community food systems	 What are the dimensions of a RCFS? What are the impacts to the supply chain of sudden, intermittent and long-term shocks? What are the necessary place-based qualities to make a community food system resilient? Who, or which 	Describe the dimensions of RCFS and their place-based qualities related to Community Capitals Framework Assess if there are common characteristics of RCFS amongst different place- based communities that allow for response to sudden, intermittent and long-term shocks	Place-based qualities that are most significant for RCFS are sound infrastructure, buffering capacity to withstand shocks throughout the supply chain, leadership and social capital within the community, and political support for returning to equilibrium.	Who: 4 case study groups with participants including farmers, processors, distributors, restaurants, institutions, consumers, LGUE staff, coalition members, local food coordinators, etc. How: snowball sampling to determine participants in case study; 1.In-depth interviews with participants 2.Secondary data analysis (census, ESRI, ERS) and development of snapshots that depict pre and post conditions for two foresight discussions 3.Foresight focus groups
	organizations, holds the power to make change within RCFS?			Analysis: Coding and theme development from interviews to determine appropriate analysis for secondary research and snapshot creation utilized in foresight focus group; overall case comparison analysis will

involve triangulation between three components as well as insight from the resident surveys utilized to inform

REVIEW: COMMUNITY ACTORS

	Questions	Objectives	Hypothesis	Who/ How/ Analysis
Community actors attitudes towards resilient community food systems	 How does community identity and resident knowledge relate to qualities of RCFS? Who are the community actors that assist in forming a RCFS? What are the perspectives of community members regarding what makes a RCFS? What are the attitudes of community residents that support and challenge RCFS? 	Identify common attitudes and perceptions of RCFS Compare values of residents that have experienced disaster that support and challenge RCFS	Community residents that have relationships within their community and have experienced a disaster (natural or human-based) are more likely to support RCFS.	 Who: community residents within each of the four case study geographies How: utilize interviews from Hypothesis #1 to inform themes that may be appropriate to include in survey in addition to attitudes and values; develop survey and utilize stratified sampling with a sampling frame of households within the geographic area of each case study Analysis: bivariate analysis between case study regions, income, education, career, political affiliations to understand similarities and differences across cases; additionally reflection and analysis between findings from secondary data snapshots

REVIEW: LAND GRANT UNIVERSITIES

	Questions	Objectives	Hypothesis	Who/ How/ Analysis
Land-Grant University engagement within resilient community	 d-Grant What are LGU-E's role in supporting RCFS? agement in • How are LGU-E ient engaged in RCFS? 	Determine current LGU-E's engagement in RCFS and potential roles in the future Understand the strength of relationships LGU-E has with	LGU-E can improve capacity for RCFS through technical assistance and community capacity support	Who: 4 case study groups with participants including: farmers, processors, distributors, restaurants, institutions, consumers, LGUE staff, coalition members, and local food coordinators
food systems	 Do LGU-E services increase the ability for a community to establish RCFS? If so, how? 	community actors of RCFS		How: develop specified interview questions for LGU-E staff and case study participants; foresight focus group observation regarding extensions involvement
				Analysis: Case comparison coding and theme development from interviews and focus group specific to LGU-E engagement

ESTIMATING THE ECONOMIC CONTRIBUTION OF THE LOCAL FOOD SYSTEM IN TENNESSEE

Oluwatooni Ajayi*, Enefiok Ekanem, and Mary Mafuyai

A Paper Presented at the Food Distribution Research Society 2020 Virtual Annual Meeting

October 13, 2020



This presentation focuses on the effect of consumers buying locally produced food on the economy



INTRODUCTION – The Local food System



 Local food systems are characterized by small scale, localized production with direct-toconsumers sales. Through channels such as farmers' markets,
 Community Supported Agriculture (CSA) and
 intermediate sales to local grocery retailers,
 restaurants, and institutions such as schools and
 hospitals

INTRODUCTION – The Local food System

- There is no consensus for the definition of the local foods system.
- For some local foods has a geographical connotation; so its food produced within 400 miles of its origin or within the State in which it is produced.
- For other local food is based on market arrangements that include direct to consumer sales. Such arrangements include Farmers Markets, Community Supported Agriculture (CSA).
- For this study, local food is defined as food produced, processed, and distributed within the study area

• Increasing consumer demands

for local produce driven by the belief that the purchase of local food options is healthier and more supportive of the local economy.



Data Source: United States Department of Agriculture (2015)

- The USDA identifies LFS as one of its pillars of agriculture and rural economic development.
- Between 2009 and 2015 the USDA invested over \$1billion in more than 40,000 local and regional food system projects.
- Therefore, understanding the impacts of these investments is crucial.

Review of the Literature

- There are several methodological approach to the study of LFS.
- Some studies assessed the economic impact of a specific component of the local food system,
- Other studies focused on the use of a framework such as the opportunity cost framework.
- For every study on the economic impact of the local food system -the specific indicators of economic impact such as employment, total output and economic multiplier have a positive impact on the economy

Economic Impact of local foods : Evidence from Literature

Local food system	Study Area	Author	Economic Impact	
Food Shed	Knoxville	Hellwinckel <i>et al.,</i> (2014)	 Economic multiplier 1.51 employs 6,000 people and adds an additional \$82million to the economy 	
Farmers Market	Oklahoma	Henneberry <i>et al.,</i> (2009)	\$31.5 in million gross salesContributes 140 jobs	
Food hubs	New York	Jablonski <i>et al.,</i> (2016)	gross output multiplier of 1.75employment multiplier of 2.14.	
Food System	Michigan	Connor <i>et al.,</i> (2008)	 Contributes 18,000 jobs to the economy Produces an Output of \$200 million 	
Farmers market	West Virginia	Hughes <i>et al.</i> , (2008)	\$2.4 million in output	

Rationale for the Study

- Limited information for these impacts for Tennessee
- There is a need to evaluate the contribution of local foods across all potential sectorsthis includes producers', processors, and distributors.
- In a bid to raise an awareness for the growing demand of locally grown food and its consequent effect on the economy:
- This study provides a comprehensive approach to evaluating the economic impact of the local food system using the state of Tennessee as an example of a region



This specific objective of this study was to:

• To measure the gross economic contributions of Tennessee's local food system using the IMPLAN's input-output model

Hypothesis



To test the hypothesis that the local food system in Tennessee, has a positive contribution on the total state output, employment, and labor income in Tennessee.

Methodology

Economic Contribution Analysis

- An economic contribution study measured the economic activity (in terms of jobs, labor income, taxes, etc.) of existing businesses and industries and estimates their contribution to the local economy.
- This study measured economic effect via:
- Economic Multipliers
- Total Output
- Employment

- Labor Income
- Direct, Indirect and Induced Effects

The Input Output Model specifies how different inputs are assembled to produce a unit of output. The output of one industry will appear as the input of the other.

		Table 2		
Purchases by Sales of	Industry 1	Industry 2	Industry n	Total sales
Industry 1	x ₁₁	<i>x</i> ₁₂	x _{1n}	$X_1 = \sum_i x_{1j}$
Industry 2	x ₂₁	<i>x</i> ₂₂	<i>x</i> _{2n}	$X_2 = \sum_{j} x_{2j}$
	1.717.1		35754	* * *
Industry n	x _{et1}	.x _{n2}	x _{nn}	$X_n = \sum_j x_{nj}$
Total purchases	<i>X</i> 1	<i>X</i> ₂	X _n	

The Input – Output Model

The input output transactions for this study were based on secondary data sources which are national averages from:

- U.S. Department of Agriculture Census of Agriculture,
- CEW: Census of Employment and Wages (Bureau of Labor Statistics BLS)
- REA: Regional Economic Accounts (Bureau of Economic Analysis BEA),
- U.S. Department of Labor Statistics,
- CBP: County Business Patterns (Census Bureau),
- NIPA: National Income and Product Accounts
- BEA: Bureau of Economic Analysis
- All which are contained in IMPLAN

Result & Discussion



■1 ■2 ■3

The Local food system contribution to employment in Tennessee



The region's local food system directly provides **99,690 jobs**

The Local food system contribution to Labor Income in Tennessee



Economic Contributions of the local food Systems in Tennessee

Output Multiplier	1.47
Income Multiplier	2.56
Employment Multiplier	1.69
Value Added Multiplier	2.063

This table shows the Tennessee's local food system's Income, Employment, Value -added multipliers

Conclusion

- Findings show that LFS have significant positive contributions on the total state output, employment, and labor income in Tennessee.
- Therefore, a strengthened local food system is an avenue for further economic development in the region of Tennessee.
- Future research should explore a unanimous and strengthened framework in evaluating the local food system, to model a method that can be applied to several definitions and interpretations of the local food system

