

Food deserts, Farmers' Market Availability, and Market Failure

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In 2010, an estimated 13.5 million adults and children lived in food deserts.

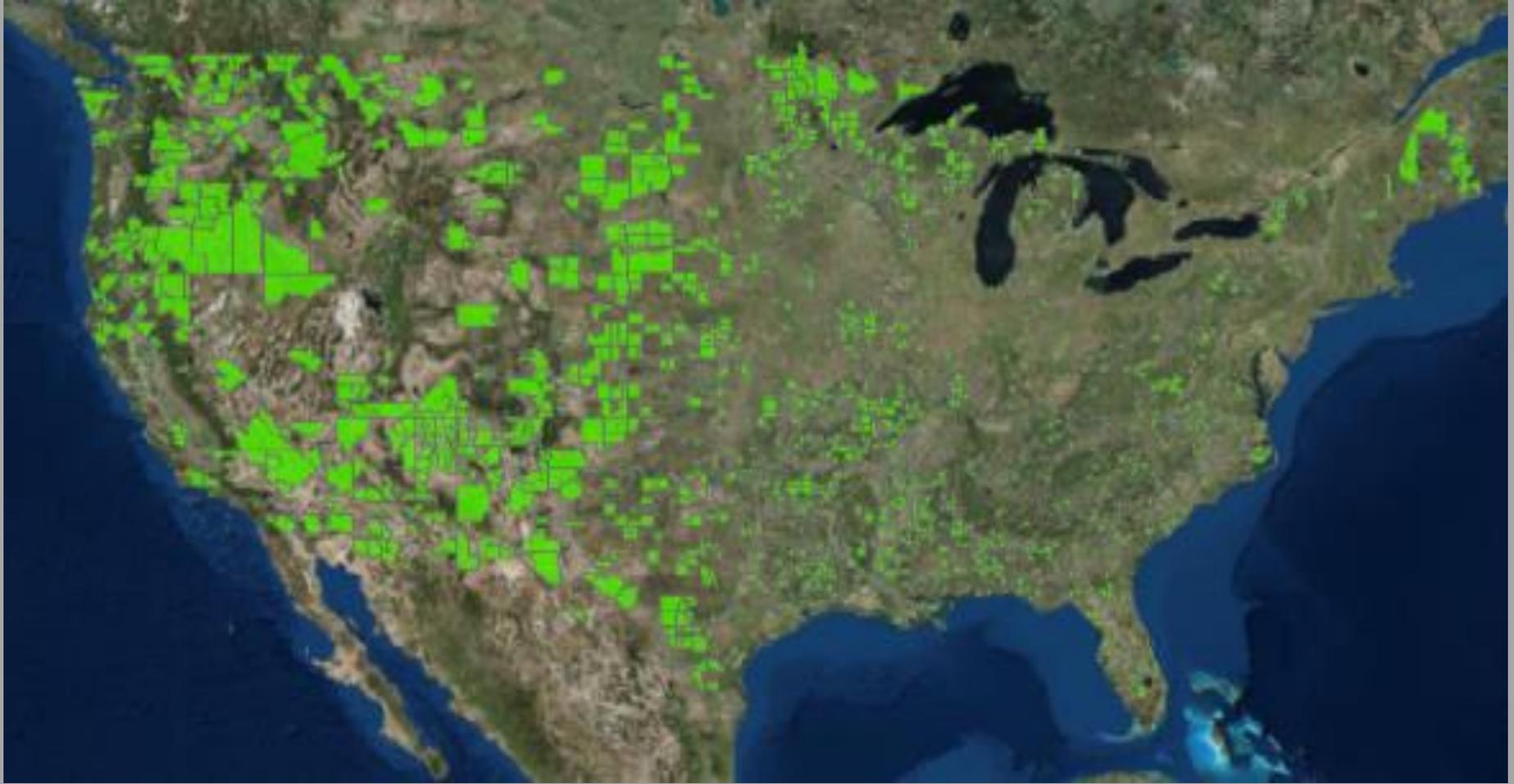


Figure 1. Map of Food Deserts in the U.S.

Source: USDA, Food Access Atlas, 2010

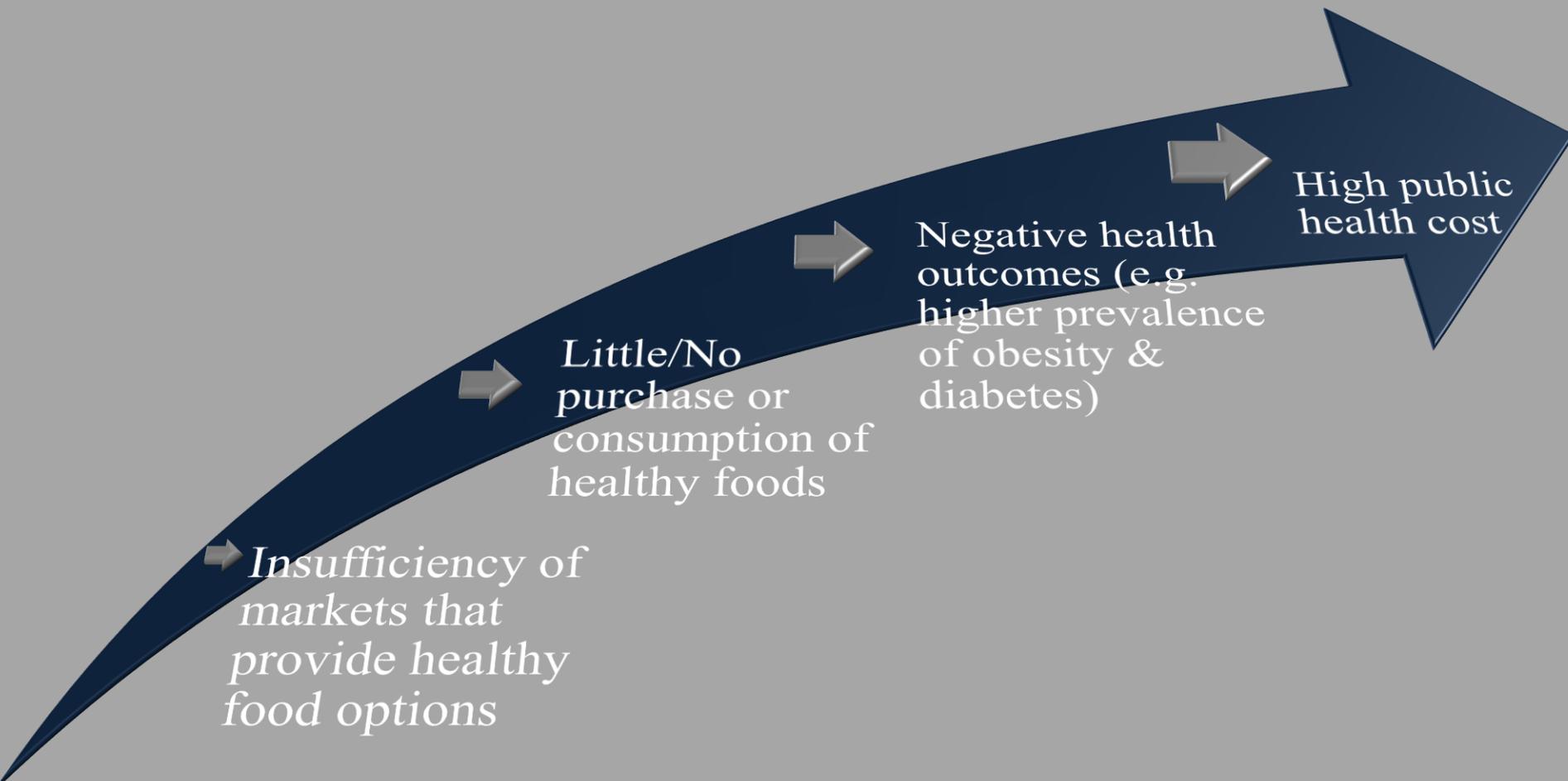
Logic of market failure based on food access and healthy food market availability

→ *Insufficiency of markets that provide healthy food options*

→ *Little/No purchase or consumption of healthy foods*

→ *Negative health outcomes (e.g. higher prevalence of obesity & diabetes)*

→ *High public health cost*



The promise of LFS in mitigating food system inequities and promoting food justice

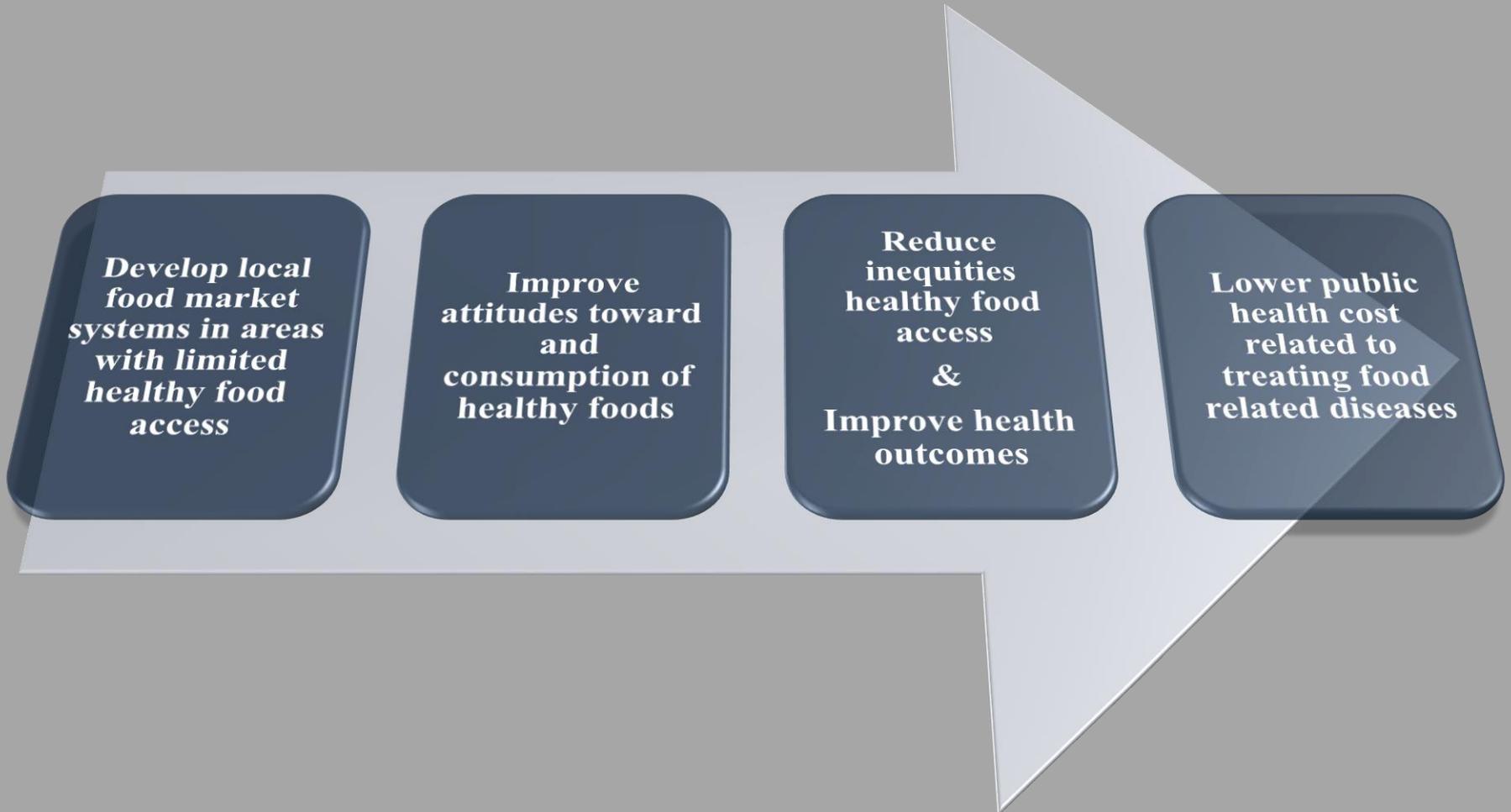
Local food system development has been promoted as a strategy or a theory of change toward improving a community's social, health and economic well-being.

The advocacy for LFS is grounded in social justice principles as they are believed to be:

“rooted in particular places, aim to be economically viable for farmers and consumers, use ecologically sound production and distribution practices, and enhance social equity and democracy for all members of the community” (Feenstra, 1997:28).

Helping to increase food access in areas underserved by traditional markets (i.e., food deserts) (Schmidt et al, 2011; Beaulac, Kristjansson, Cummins, 2009).

Figure 1. Theory of change in improving healthy food accessibility through local food system development



Government intervention in LFS development

In the 2008 Farm Bill USDA was commissioned to assess the prevalence of food deserts and other food market deficiencies and to provide measures to correct or mitigate the issues associated with existing deficiencies (USDA, 2010).

Through the Healthy Food Financing Initiative (HFFI), the Obama Administration allocated \$400 million towards establishing programs focused on developing and implementing strategies to mitigate these issues (U.S. DHHS, 2010; US White House, 2010).

➤ E.g. Farmers' Market Promotion Program

Local food systems are linked to numerous USDA priorities—including

- “enhancing the rural economy and the environment,
- improving food access and nutrition,
- informing consumer demand, and
- strengthening agricultural producers and markets” (Low et al, 2015).

Research Gaps

1. Limited evidence that local food systems are being developed in way that increases market access in disadvantaged communities.
2. Lack of evaluation and evidence of the potential for government intervention to ameliorate food system market failures through local food system development assistance programs.

Data Sources

- U.S. Food Environment Atlas (main)
- U.S. Census of Agriculture
- Atlas of Rural and Small Town America
- Know Your Farmer Know Your Food

Methods of Analysis

- County level of analysis
- Multivariate regression analysis w/ robust standard errors
- Missing data
- Stratification methods

MODEL 1

MODEL 2

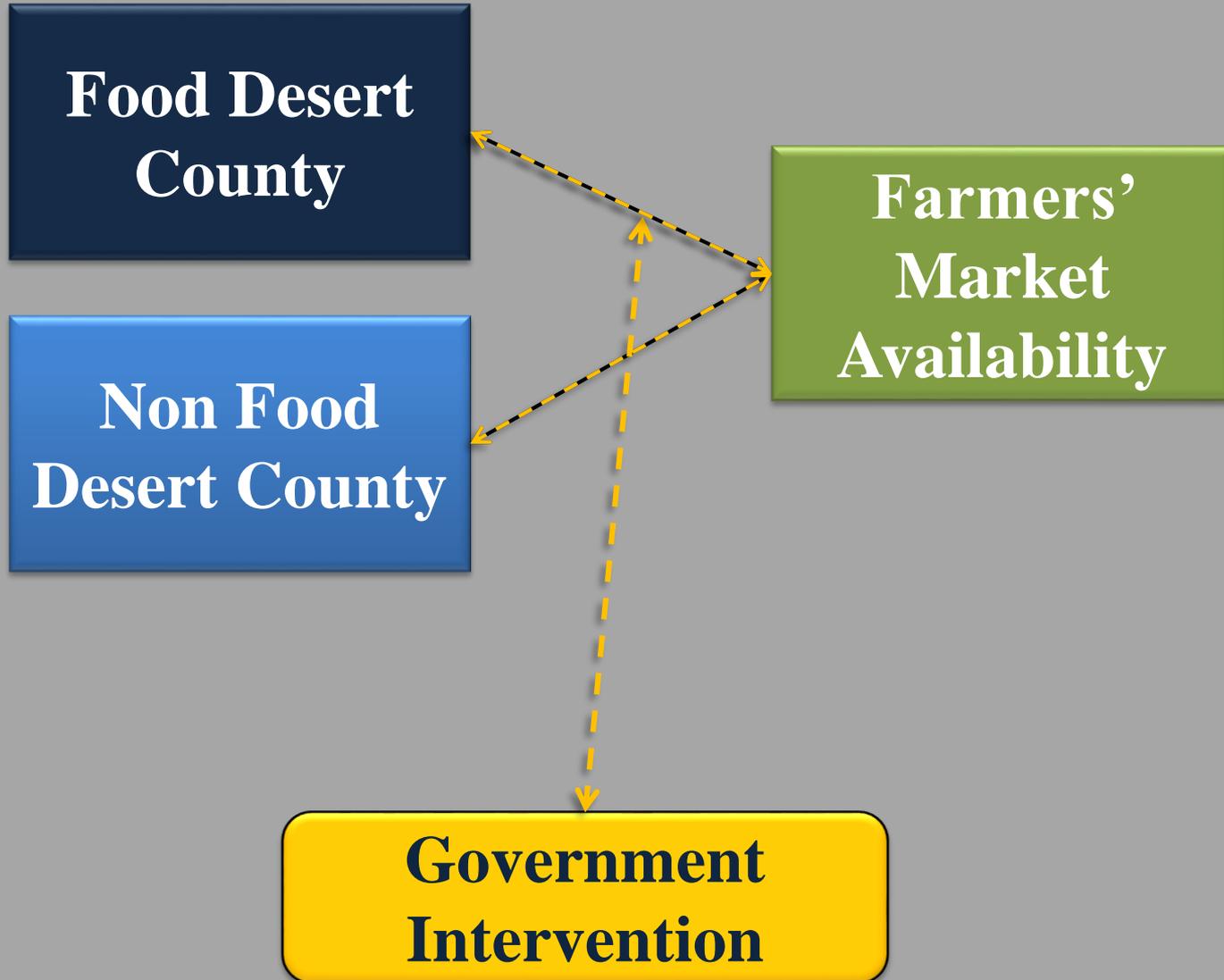


Table 1. Descriptive Statistics by Geographic Designation				
	Mean	SD	Min	Max
<i>Full Sample</i>				
Farmers' markets availability	2 (1.96)	4.53	0	102
Total grants/loans awarded to county (in \$100K)	\$15,513	\$102,465	\$0	\$2,474,000
<i>Urban</i>				
Farmers' markets availability	4 (3.5)	6.8	0	102
Total grants/loans awarded to county	\$32,211	\$155,130	\$0	\$2,474,000
<i>Suburban</i>				
Farmers' markets availability	1 (1.2)	1.72	0	17
Total grants/loans awarded to county	\$6,429	\$50,722	\$0	\$1,388,549
<i>Rural</i>				
Farmers' markets availability	1 (.904)	1.60	0	23
Total grants/loans awarded to county	\$4,728	\$52,508	\$0	\$841,610

Table 2. Sub-group descriptive statistics by metropolitan statistical area designation

Sample Group / Sub-group		Number of counties	Average number of farmers' markets	Counties with farmers' markets available (%)	Counties awarded grants/loans (%)	Average grants/loans awarded
All Counties	Non Food Deserts	3042	2	62.0%	9.3%	\$15,913
	Food Deserts	91 (3%)	1	13.0%	2.2%	\$1,894
Urban Counties	Non Food Deserts	1158	4 (3.5)	72.0%	15.5%	\$32,398
	Food Deserts	5 (0.4%)	0	0%	0%	\$0
Suburban Counties	Non Food Deserts	1008	1 (1.2)	60.5%	5.3%	\$6,408
	Food Deserts	19(1.9%)	<1 (0.316)	39.7%	5.9%	\$7,496
Rural	Non Food Deserts	854	<1 (0.963)	56.8%	4.5%	\$5,061

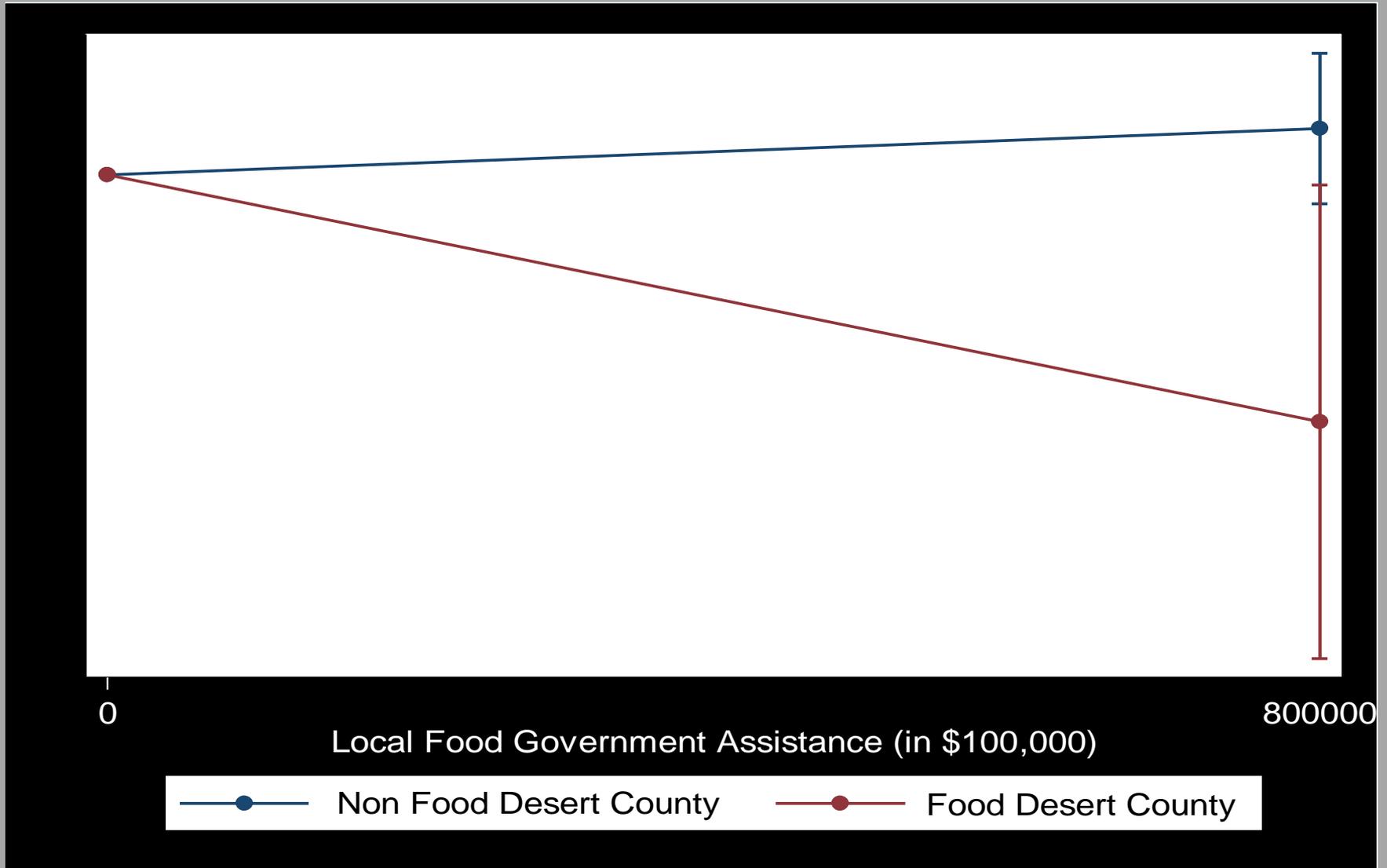
Chapter 2: Sample size & Model fit

Sample Group	N	R ²
All counties	3050	0.654
Urban counties	1121	0.681
Suburban counties	1013	0.322
Rural Counties	916	0.372

Table 3. Regression coefficients for main dependent and independent variables

Independent / Moderating Variables	β	
	Model 1	Model 2
All counties		
Food Desert Binary	-0.342*	-0.315*
Total local food grants awarded, 2009		0.376*
Food Desert Binary * Total local food grants awarded (in \$100,000)		-1.19^
Urban counties		
Food Desert Binary	1.03	1.07
Total local food grants awarded, 2009		0.379*
Food Desert Binary * Total local food grants awarded (in \$100,000)		Omitted
Suburban counties		
Food Desert Binary	-0.470*	-0.454*
Total local food grants awarded, 2009		0.083
Food Desert Binary * Total local food grants awarded (in \$100,000)		-0.174
Rural counties		
Food Desert Binary	-0.217*	-0.201^
Total local food grants awarded, 2009		0.252
Food Desert Binary * Total local food grants awarded (in \$100,000)		-1.61*

Figure 1. Interaction effects between food desert counties and government intervention on the predicted value of farmers' market availability in rural counties



Discussion & Implications

Fewer farmers' markets are found in counties that also lack access to conventional food markets, particularly in suburban and rural contexts;

- Local food markets have the potential to be elite systems (Hinrichs, 2000; Feagan, 2007) subject to market failure, therefore may exacerbate rather than help mitigate the food desert problem.

Government intervention seem to have targeted both progressive counties in terms of farmers' market availability (rural non food deserts and urban counties overall) and non progressive counties (rural food deserts).

- These findings suggest that government intervention may have been in the exploratory stage in terms of identifying effective approaches to LFS Development while also exploring areas in which barriers to development were high.

Study Limitations

- Causal limitations (cross sectional data)
- County level of analysis
- Endogeneity
 - Omitted variable bias -- other forces influence market development/availability in a given areas

Future Research

- Should evaluate other types of local food markets
- Conduct longitudinal analysis
- Evaluations should consider multi-level and multi-perspective factors that influence market availability and accessibility.

Policy Implications

In order for organizations and communities to achieve food justice goals, interventions (e.g. policy- and grant-making) to increase healthy food access must be designed and structured to:

- Target the most critical stakeholders— socioeconomically disadvantaged communities (food deserts) and groups (small and mid-scale farms) (Scorza, Henderson, & Castillio, 2012) .
- Fit the environmental, social, and cultural conditions that exist in a given environment
- Be holistic or systems based (i.e. multi-level, multi-perspective, and multi-interventional approach toward identifying and mitigating barriers to food market availability and accessibility that these groups face)

Thank you for your time & attention

Questions???