

The Political Implications of “Food Desert” Mapping

A Case Study Comparing the Political and Social Implications of USDA Versus Local “Food Desert” Definitions in the State of Maryland and City of Baltimore

Introduction

In assessing a community’s access to healthy food and risk for diet-related diseases, the classification of a “food desert” has become the standard method of analysis. The USDA’s Food Access Research Atlas classifies US communities at the census tract level as qualifying “food deserts” based on income and supermarket accessibility measures, a seemingly objective qualification that has come to hold significant political implications for the actual people living in these tracts¹. Since 2010, USDA-defined food desert areas have received support to improve their food environments through the nation-wide Healthy Food Financing Initiative³.

However, academics and localities have begun to critique the USDA’s methods for defining food deserts. In 2012, the U.S. Conference of Mayors Food Policy Task Force asserted that the USDA’s definition “does not capture the reality of limited access we have found in many of our cities.”¹ Local leaders such as those in the Baltimore Food Policy Initiative have proposed alternative methodologies they argue are more accurate in mapping low healthy food access and high diet-related disease risk areas within their communities¹.

While the controversy between methodologies has been widely discussed, the political and social implications for the resulting different maps have not been assessed. This analysis utilizes both USDA and local definitions of “food desert” areas to compare the resulting demographic profiles of “food desert” populations, investigate a local definition’s ability to account for its community’s health patterns, and explore the political implications for communities with the highest diet-related disease rates that are or are not accounted for in these contrasting definitions of low healthy food access.

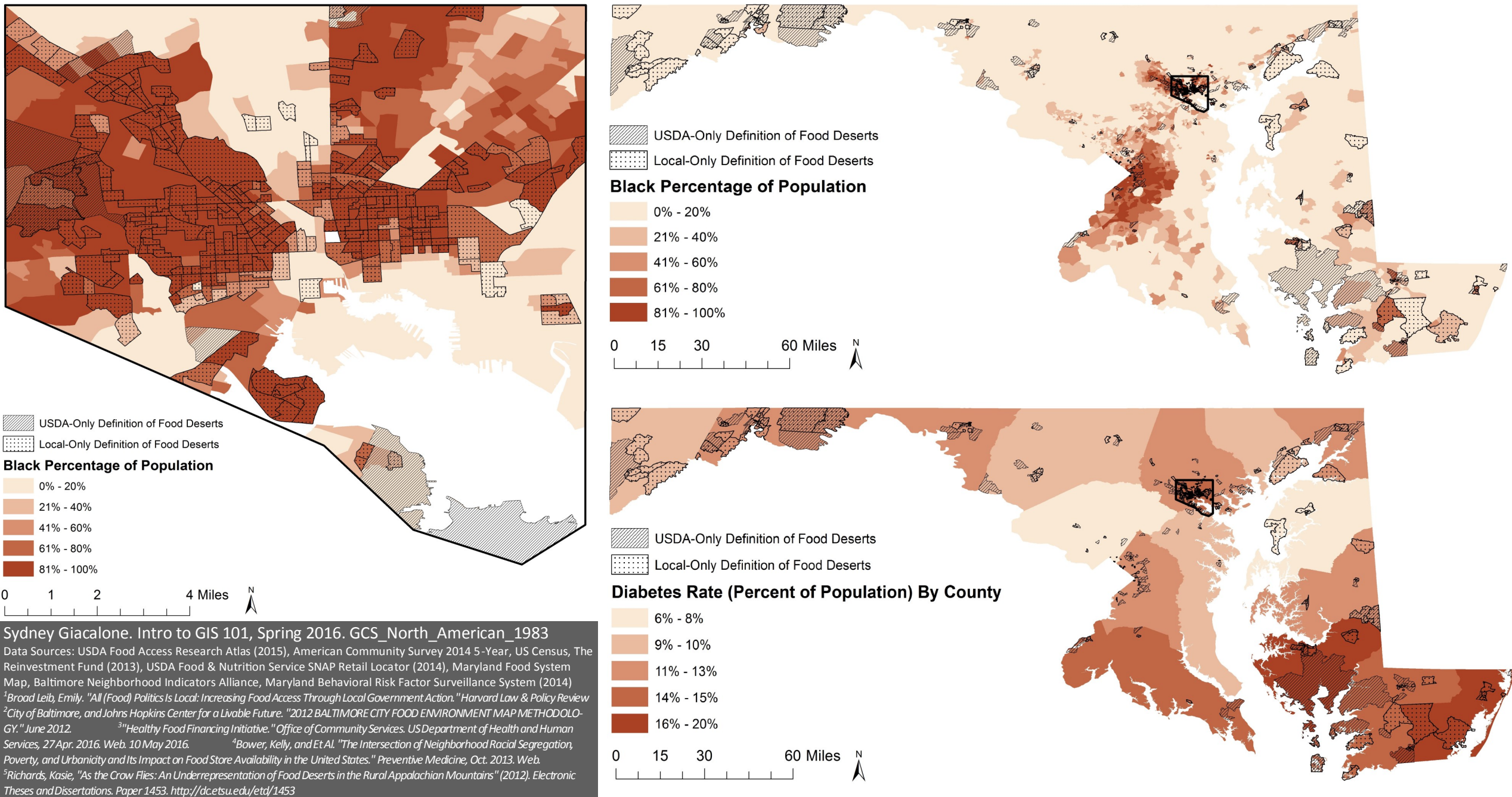
Methodology

The state of Maryland and city of Baltimore were chosen as the case study areas for this analysis to allow for both rural and urban analysis as well as usage of a local methodology determined by its own policy makers². For the USDA definition, classification of census tracts as food deserts or not food deserts was downloaded from the USDA Food Access Research Atlas. American Community Survey data was downloaded for block group and census tract demographics. Layers for each component of the local definition were created by selecting for the attribute benchmark detailed in the chart below, followed by the intersection of these three layers. The benchmarks for each attribute were chosen based on review of urban planning literature⁵ and the Baltimore Food Policy Initiative’s chosen mapping benchmarks appropriate to their local reality².

	USDA Definition of Food Desert	Local Definition of Food Desert
"Low Food Access"	Census tract has > 500 people or 33% of its population living > 1 mile from a supermarket in urban areas, > 10 miles in rural areas	Block group contains area that is > 0.25 miles from a supermarket in urban areas, > 8 miles in rural areas
"Low Income"	Census tract has > 20% Poverty or median family income < that is 80% of state average	Block group has household median income that is < 185% of Federal Poverty Rate (< \$44,123)
"Low Vehicle Access"	Not considered in official definition	Block group has > 30% households with no vehicles

results table. The two definitions’ food desert classifications were then overlaid onto state and city demographics and diabetes rates. For Baltimore, several community-level social health indicators were plotted against the percentage of that community’s population living in a locally-defined food desert block group.

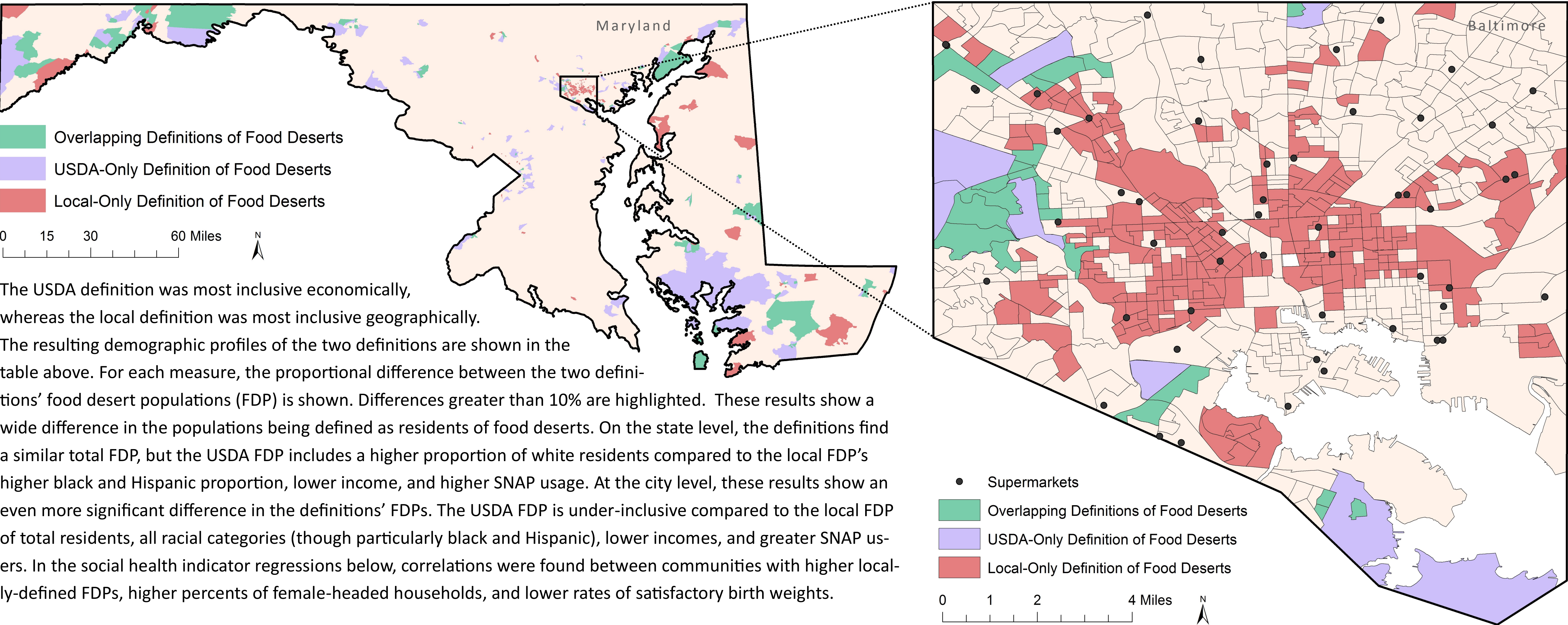
Food Desert Definition Overlays On Racial and Health Data



Results

	State of Maryland			City of Baltimore		
	USDA Definition	Local Definition	Difference	USDA Definition	Local Definition	Difference
People that live in food deserts...						
Total Food Desert Population	452,605	445,497	2%	37,460	243,795	-85%
White Food Desert Population	230,033	157,927	31%	11,531	35,423	-67%
Black Food Desert Population	177,628	255,647	-31%	23,697	193,704	-88%
Hispanic Food Desert Population	40,081	28,753	28%	2,043	9,733	-79%
Total Households in Food Deserts	161,422	177,009	-9%	14,527	95,499	-85%
SNAP Households in Food Deserts	28,091	51,731	-46%	3,350	33,211	-90%
Below-Poverty Households in Food Deserts	24,784	56,429	-56%	3,008	36,370	-92%
Proportion of the region that lives in food deserts...						
Percent of Total Population	8%	8%	0%	5%	36%	-30%
Percent of White Population	7%	5%	2%	5%	16%	-10%
Percent of Black Population	10%	15%	-4%	6%	47%	-42%
Percent of Hispanic Population	8%	6%	2%	7%	31%	-25%
Percent of Total Households	7%	8%	-1%	5%	36%	-31%
Percent of Households Receiving SNAP	13%	23%	-11%	5%	53%	-48%
Percent of Households Below Poverty Line	12%	28%	-16%	5%	65%	-59%
Characteristics of the average food desert block group...						
Household Median Income	\$52,166	\$28,597	45%	\$47,826	\$26,405	45%
Percent of Households Receiving SNAP	17%	35%	-17%	22%	40%	-18%
Percent of Households Below Poverty Line	15%	31%	-16%	20%	36%	-16%
Black Percent of Total Population	40%	63%	-23%	65%	83%	-18%

Comparison Between USDA and Local Definitions of Food Deserts: Maryland and Baltimore



The USDA definition was most inclusive economically, whereas the local definition was most inclusive geographically. The resulting demographic profiles of the two definitions are shown in the table above. For each measure, the proportional difference between the two definitions’ food desert populations (FDP) is shown. Differences greater than 10% are highlighted. These results show a wide difference in the populations being defined as residents of food deserts. On the state level, the definitions find a similar total FDP, but the USDA FDP includes a higher proportion of white residents compared to the local FDP’s higher black and Hispanic proportion, lower income, and higher SNAP usage. At the city level, these results show an even more significant difference in the definitions’ FDPs. The USDA FDP is under-inclusive compared to the local FDP of total residents, all racial categories (though particularly black and Hispanic), lower incomes, and greater SNAP users. In the social health indicator regressions below, correlations were found between communities with higher locally-defined FDPs, higher percents of female-headed households, and lower rates of satisfactory birth weights.

Community Social Health Indicators: Food Desert Definition Overlays and Regressions

