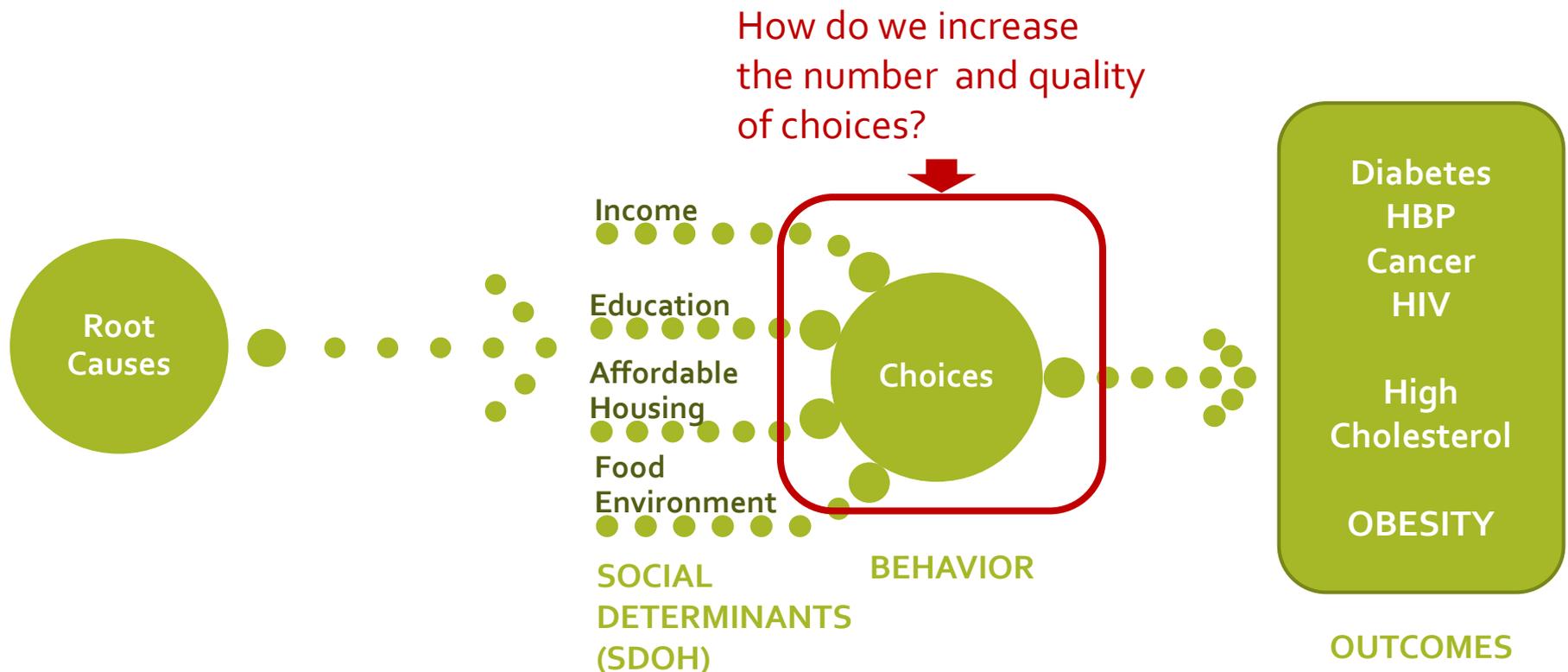


SPATIAL POPULATION AND ASSET REPRESENTATIONS: A GUIDE FOR PUBLIC HEALTH PROGRAM PLANNING (HOW DO YOU FIND WHAT YOU NEED?)

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When confronting barriers to access, social determinants of health (SDOH) can dictate our choices. SDOH may be distributed unequally in the population.



FY'17 EBT at Michigan Farmers Markets Project

- Electronic benefit transfer (EBT) - An electronic system that allows state welfare departments to issue benefits via a magnetically encoded payment card
- Address food insecurity by improving healthy food access to families in need
- Encourage farmers markets (FM) to accept Supplemental Nutrition Assistance Program (SNAP) benefits
 - 300 FMs participate in Michigan Farmers Market Association (MiFMA)
 - 139 FMs do not accept SNAP benefits
- Identify areas reaching the greatest number of SNAP eligible families by mapping and analyzing data

Method

- Selected geographic level for comparison
- Defined families in need
 - SNAP eligible (income less than 1.85X poverty level)
 - No healthy food retail options such as fresh foods at supermarkets, large grocery stores, or fruit and vegetable stores
- Defined accessible as farmers markets within specified driving/walking distance (buffer)
 - ½-mile radius for urban area
 - 5-mile radius for rural area
- Used geoprocessing to create buffers
- Determined which census tracts were accessible to farmers markets (within or intersecting buffer)

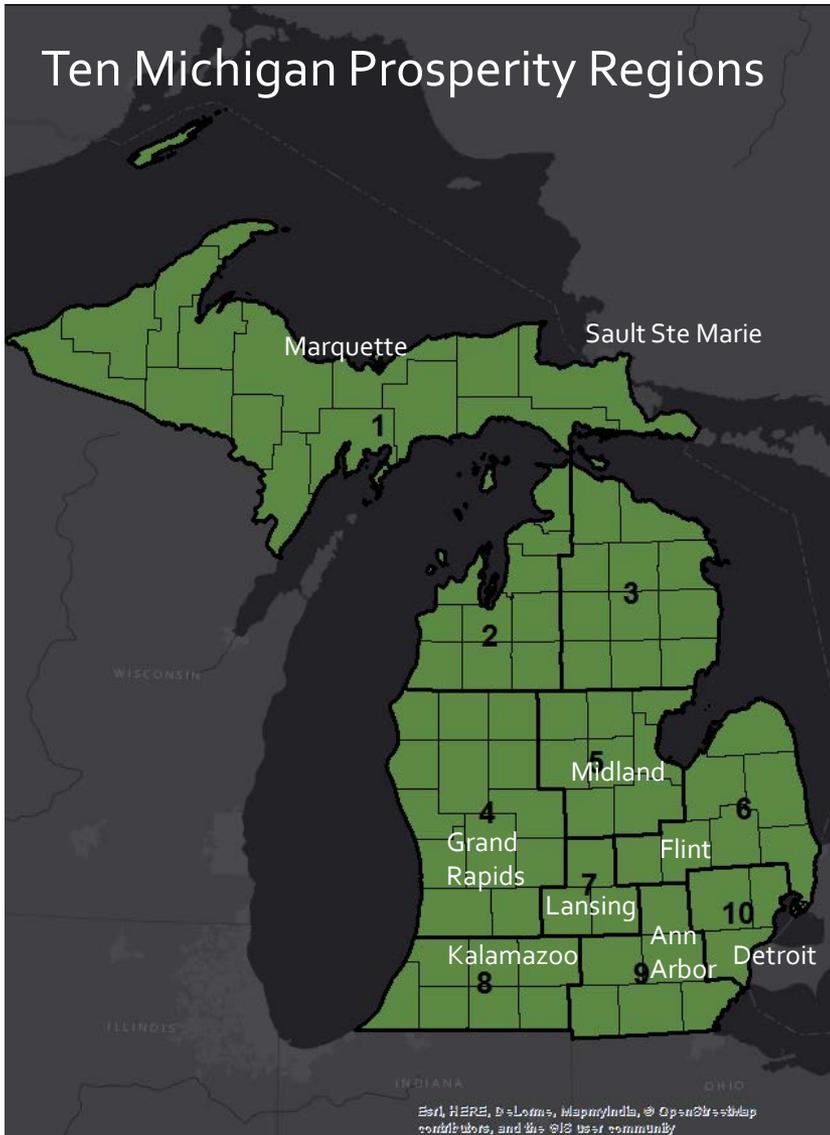
Analysis – Ranked regions based on

- Estimated number of families eligible for SNAP and accessible to FMs by geographic region
- Estimated percentage of families eligible for SNAP and accessible to FMs by geographic region

$$\text{Percentage} = \frac{\text{Estimated SNAP families}}{\text{Total estimated families}} \times 100\%$$

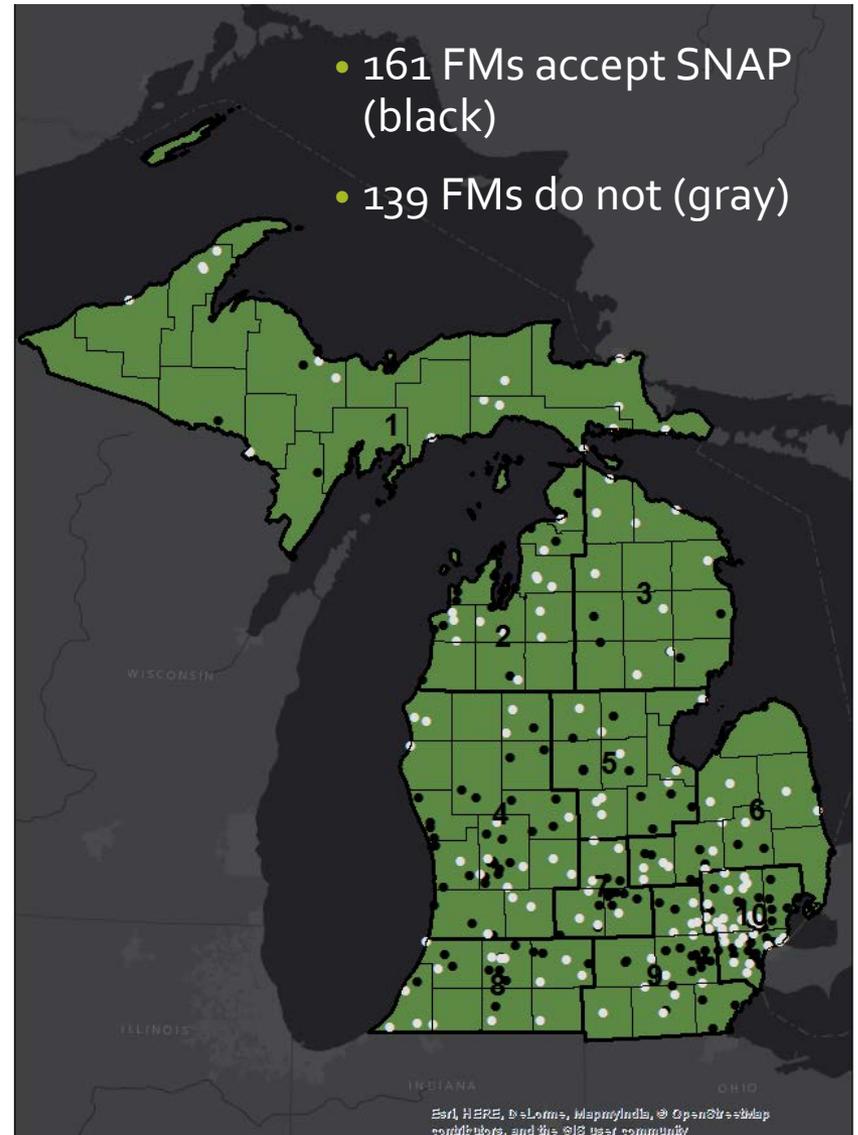
- Both

Ten Michigan Prosperity Regions



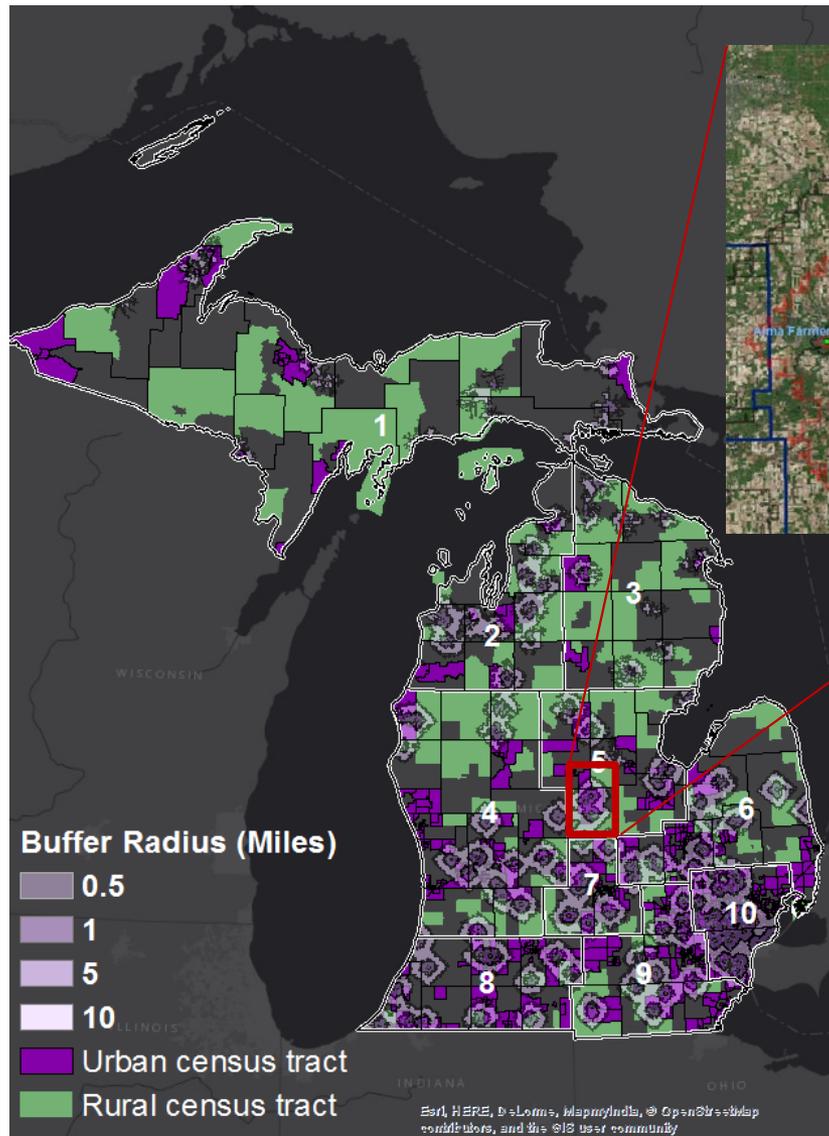
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- 161 FMs accept SNAP (black)
- 139 FMs do not (gray)



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Families in Need and Accessibility to FM



- Each census tract shown had
 - No healthy food retailers
 - At least one family that was SNAP eligible
- Driving/walking distance was a buffer radius (red) of
 - 0.5 mile for urban census tracts
 - 5 miles for rural census tracts

For example, this extent shows three farmers markets accessible to families living in a rural area in Prosperity Region 5.

Sources and Resources:

Nielsen Business-Fact 2015.2

American Community Survey 5 yr. estimate, 2010-2014

ESRI ArcGIS Platform

Results – Top 3 rankings

Prosperity Region	Estimated number families accessible to FM by Prosperity Region	Estimated number families SNAP eligible accessible to FM by Prosperity Region	Percent
Region 1	10,404	3,043	29.2%
Region 2	10,673	2,723	25.5%
Region 3	14,982	3,781	25.2%
Region 4	30,824	7,900	25.6%
Region 5	15,550	5,551	35.7%
Region 6	14,559	3,018	20.7%
Region 7	7,274	1,475	20.3%
Region 8	13,488	3,659	27.1%
Region 9	19,162	3,456	18.0%
Region 10	42,353	6,993	16.5%

*FM – Farmers market; Supplemental Nutrition Assistance Program

Findings

- Regions 1, 5, and 8 had the three highest percentages of families eligible for SNAP in the Prosperity Region (29.2%, 35.7%, and 27.1%, respectively).
- Regions 4, 5, and 10 had the three highest estimated number of families eligible for SNAP benefits in the Prosperity Region (7,900, 5,551, and 6,993).
- Prosperity Region 5 had the highest percentage and third highest estimated count of families SNAP eligible accessible to farmers markets not accepting SNAP benefits.

Conclusions

- Farmers markets accepting SNAP benefits is one means of improving healthy food choices for families in need.
- Mapping was used to estimate the potential population reach of farmers markets 1) accessible to SNAP eligible families and 2) that start accepting SNAP benefits.
- Potential reach estimates were determined for the ten Prosperity Regions and compared.
- The results showed that region 5 ranked the highest for estimated reach of families for improved accessibility to healthy food.