

Integrating & Harmonizing Food Systems Data

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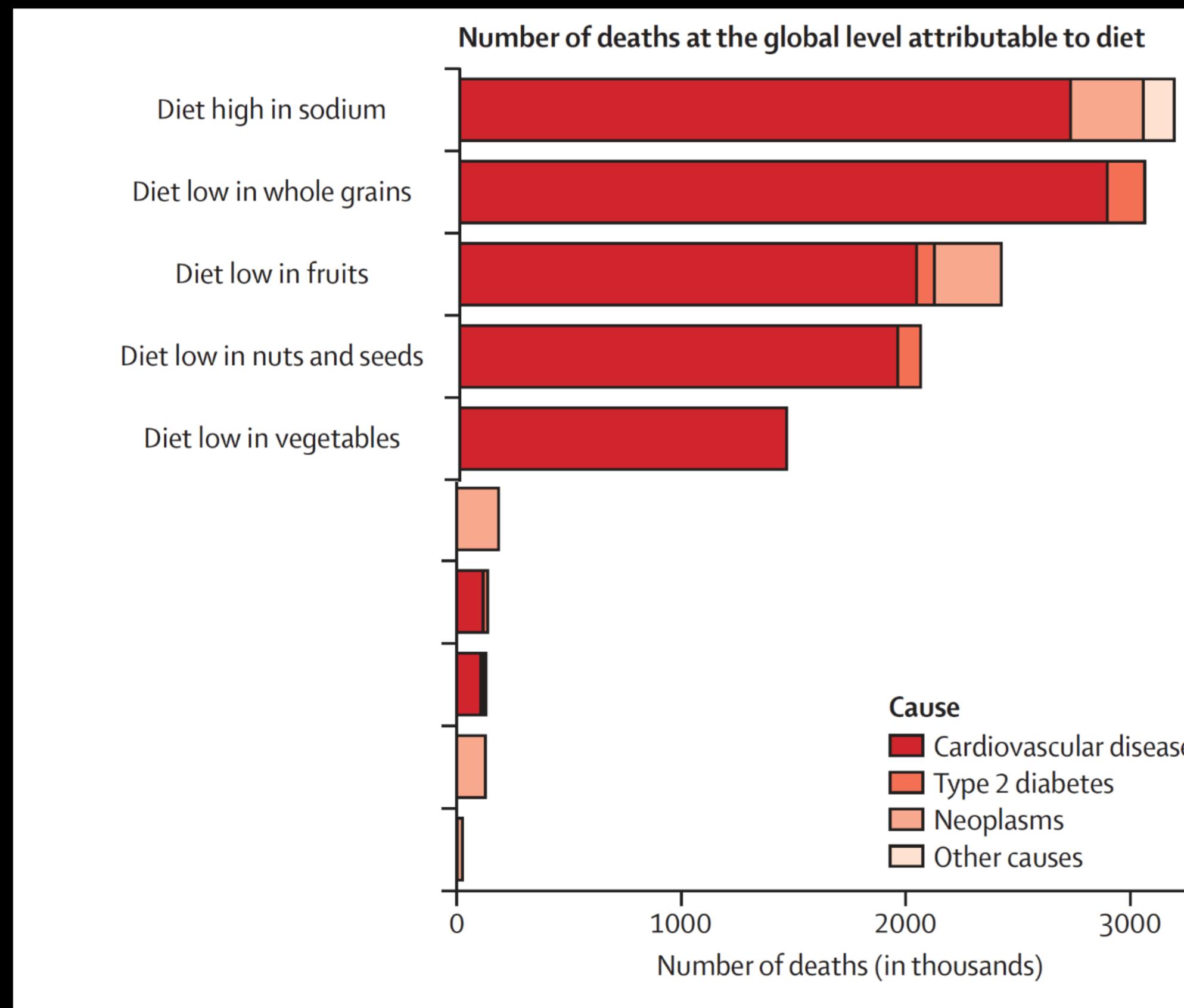
USC Dornsife
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Medicine of USC**

USC Price
Sol Price School of Public Policy



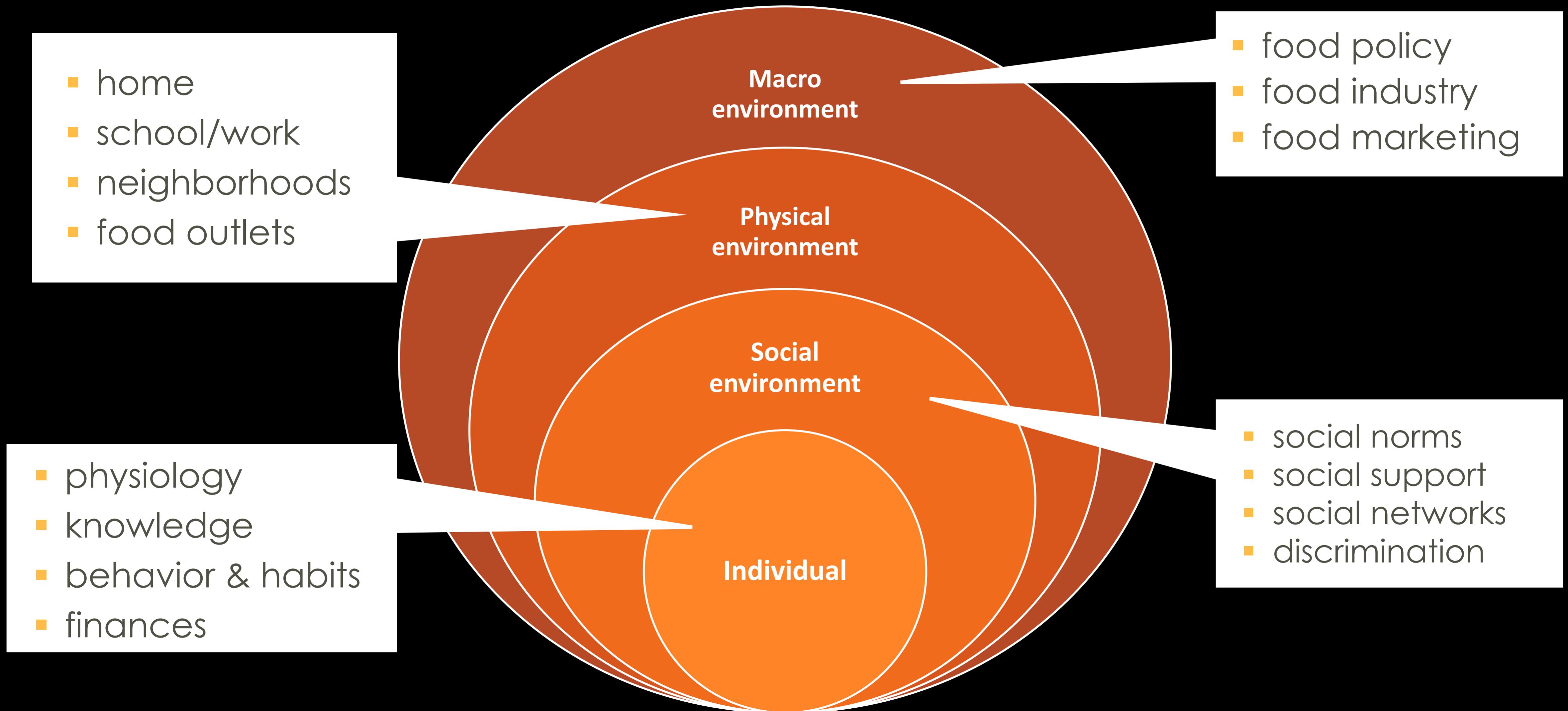
Poor diets are a major public health risk and driver of **health disparities**.



“Unhealthful diet is THE leading risk factor for cardio-metabolic diseases and mortality worldwide”

Global Burden of Disease Study, The Lancet (2019)

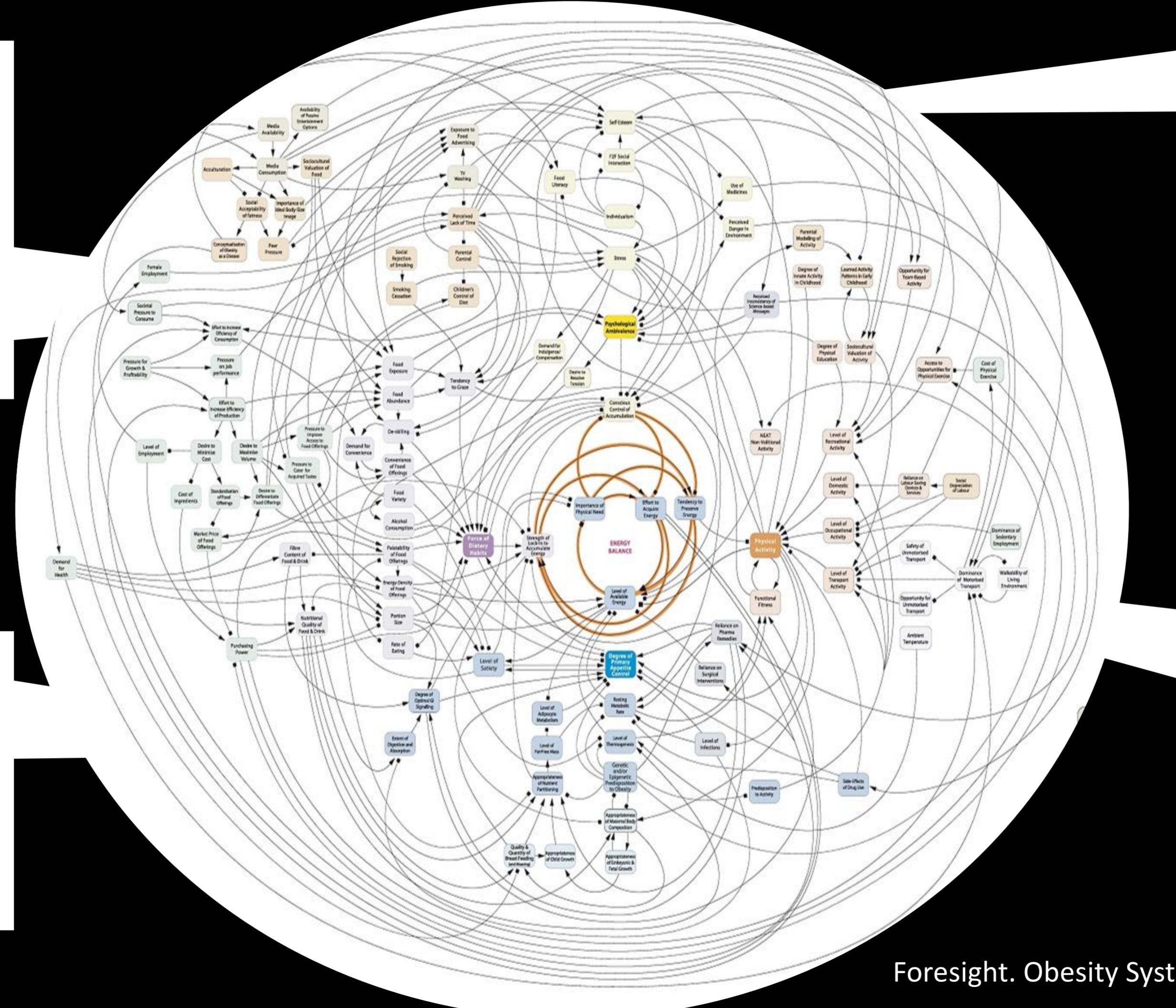
ECOLOGICAL MODEL OF EATING



ECOLOGICAL SYSTEMS MODEL OF EATING

- home
- school/work
- neighborhoods
- food outlets

- physiology
- knowledge
- behavior & habits
- finances



- food policy
- food industry
- food marketing

- social norms
- social support
- social networks
- discrimination

Foresight. Obesity Systems Map.

CHALLENGE

To develop and monitor **whole-of-system solutions** that improve population diets, **food system data** needs to be identified, integrated, and analyzed, and insights need to be translated to stakeholders working on food issues.



Approach

LOCAL FOCUS: LOS ANGELES COUNTY

- **10 million** diverse residents living across 4,753 mi² of varied food landscapes
- **15%** of adults eat the recommended daily servings of fruits & vegetables
- **31%** of adults and **39%** of kids drink one or more sugary drinks a day



Map source: Los Angeles County Economic Development Corporation

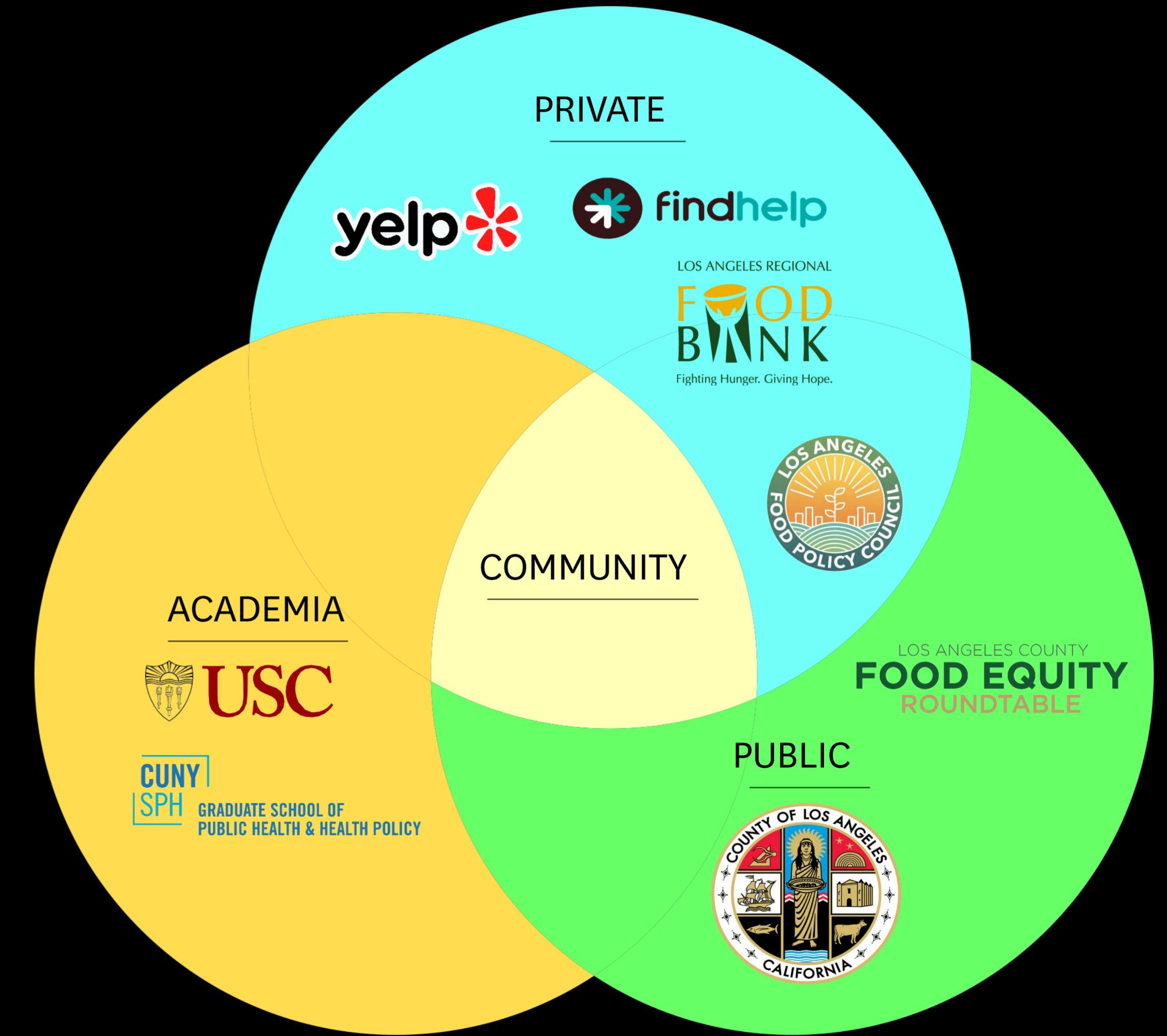
A Strong Multi-Disciplinary and Multi-Sector Partnership

TEAM SCIENCE

Funding sources:

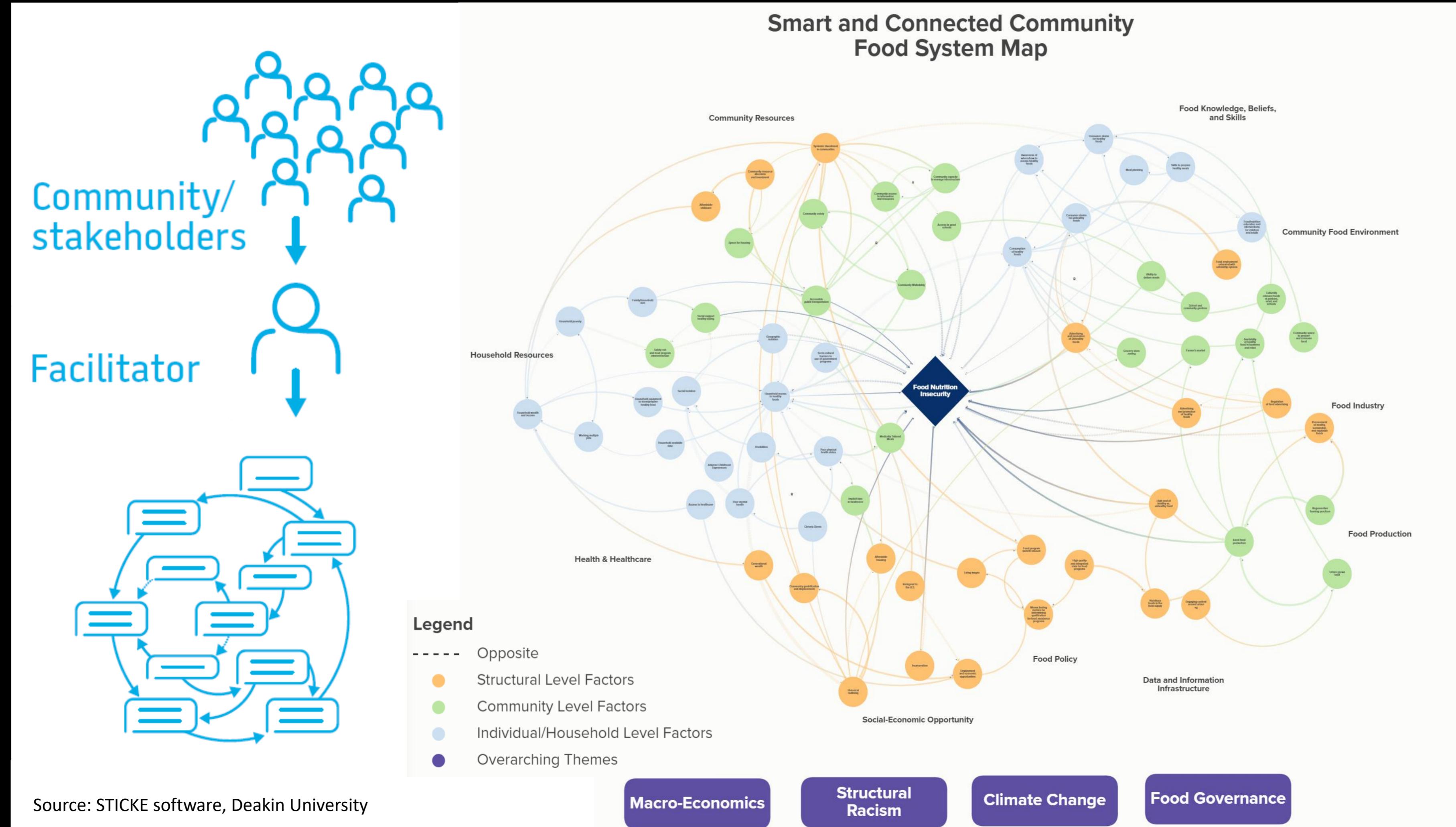


National
Science
Foundation

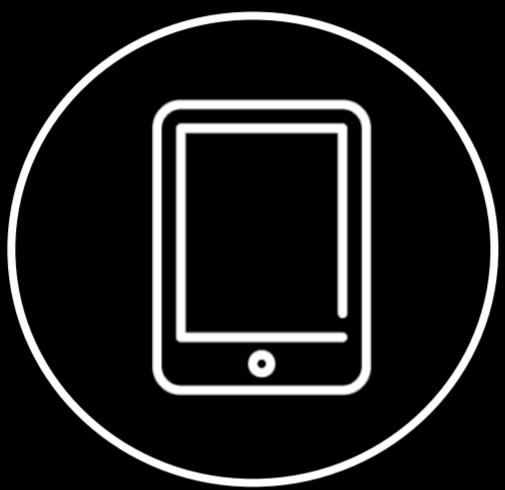


MAPPING THE LOCAL FOOD SYSTEM

Develop a **food systems map** with local stakeholders, identifying the drivers of food and nutrition insecurity



PIPELINE OF INFORMATION



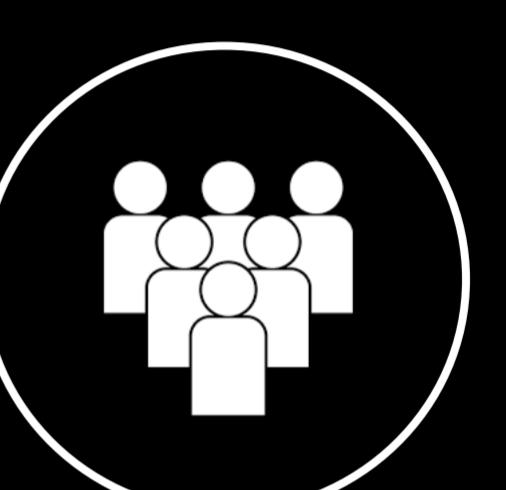
SURVEYS



'BIG DATA'



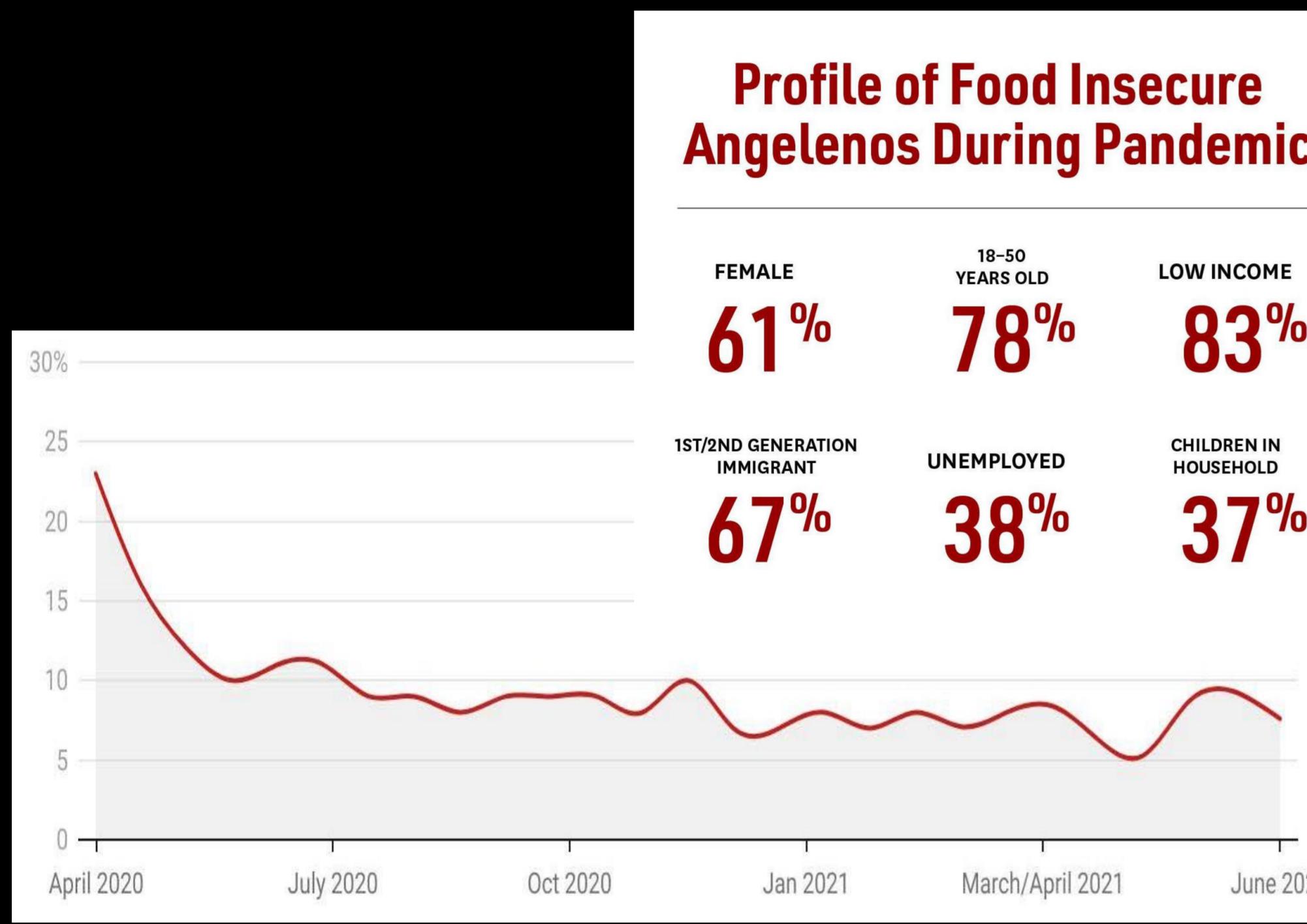
PUBLIC &
CONSUMER
DATA



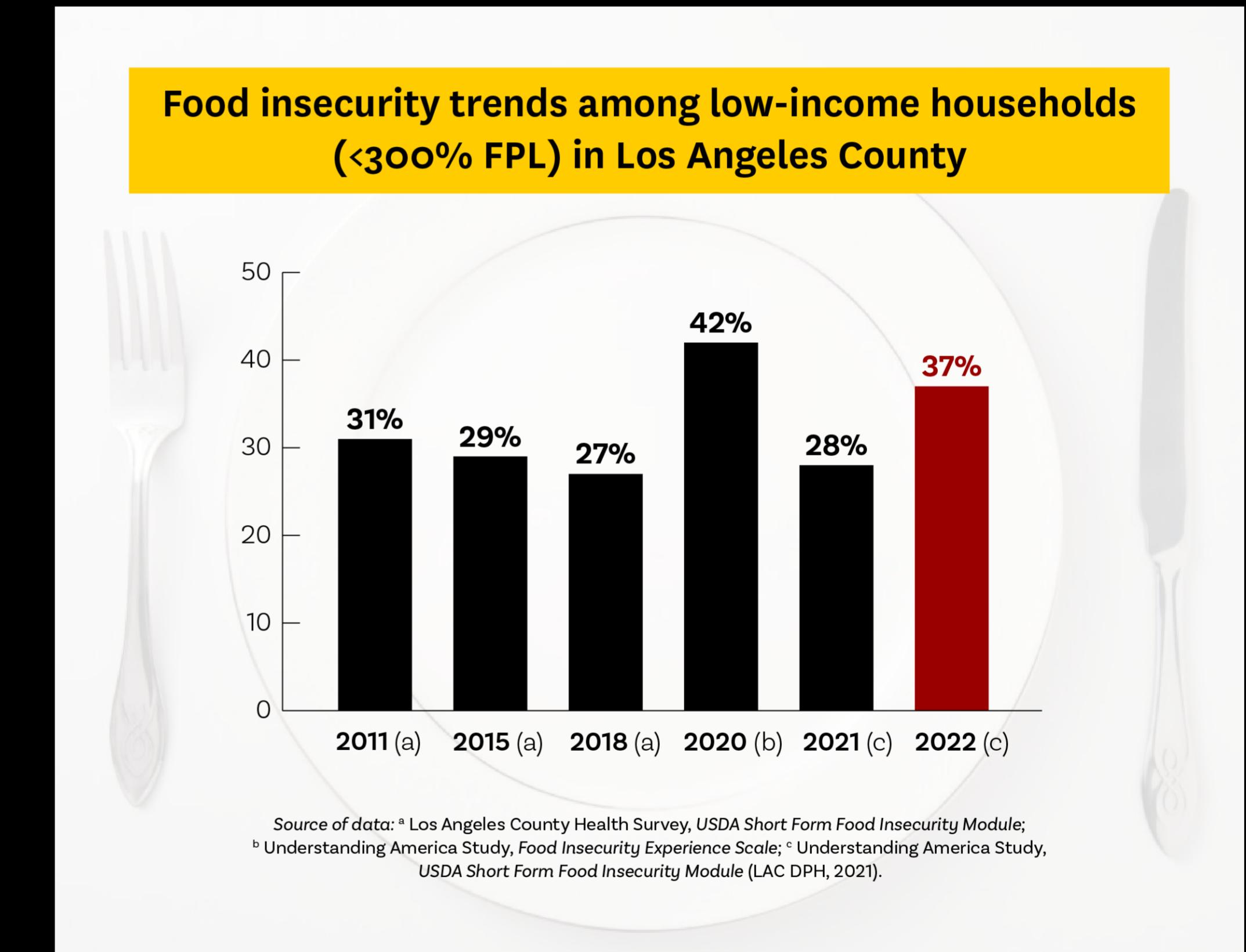
GVT. &
COMMUNITY
PARTNERS

KEY INSIGHTS

Food insecurity peaked in April-May 2020 and then improved through 2021. Food insecurity rose again in 2022.



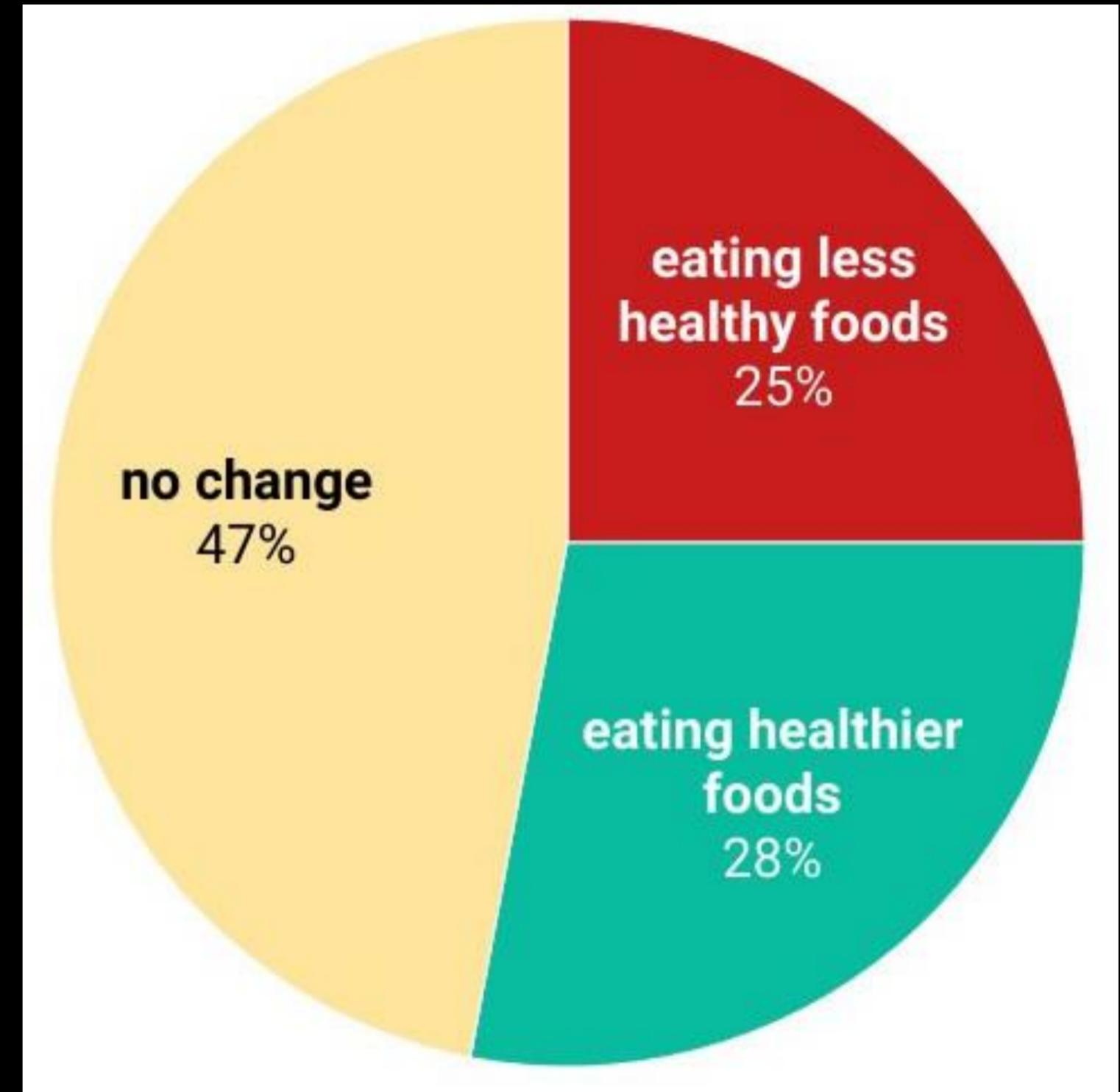
Rates of **past week** food insecurity: April 2020 to June 2021



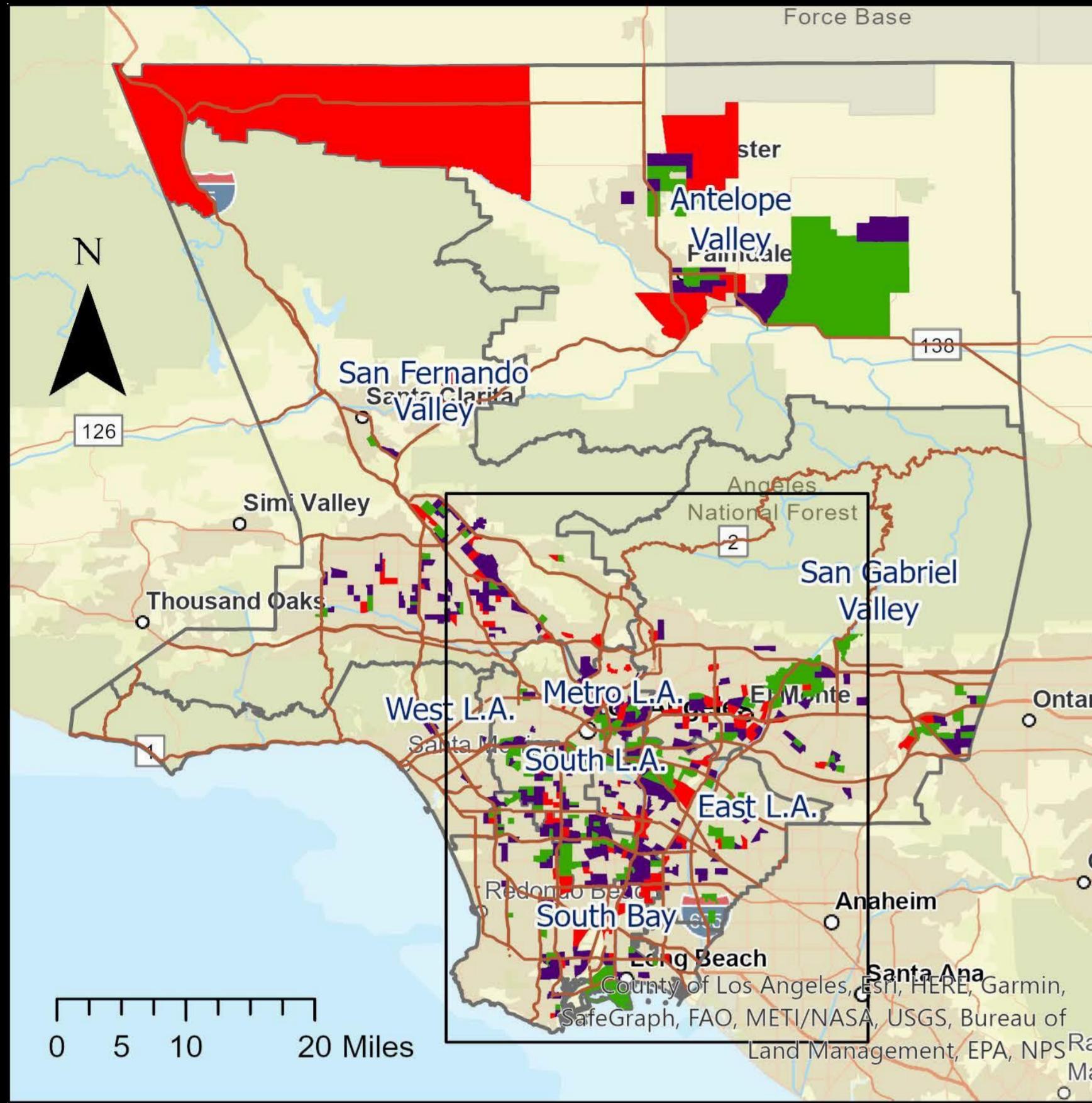
More than half of L.A. County residents reported making changes to their diet in 2020: some healthy, some unhealthy.

Unhealthy changes in were significantly more common among:

- people who experienced food insecurity
- people with neighborhood barriers to food access



Miller et al. (2021). Self-reported dietary changes among Los Angeles County adults during the COVID-19 pandemic. *Appetite*, 166:105586.



Double Burden: Food Deserts and Food Assistance Deserts

- Food desert census tracts with access to food assistance
- Food deserts with no food assistance providers within census tract boundaries
- Food deserts with no food assistance providers within 0.5 miles of census tract boundaries
- L.A. County Highway
- Los Angeles County Service Planning Areas

More than 350 L.A. County census tracts face a double burden of food desert + food assistance desert

- **1 in 4** residents live in a food desert
- **836** food assistance providers in 2020
- **65%** of food desert census tracts had no food assistance provider, with concentrations in under resourced communities



findhelp

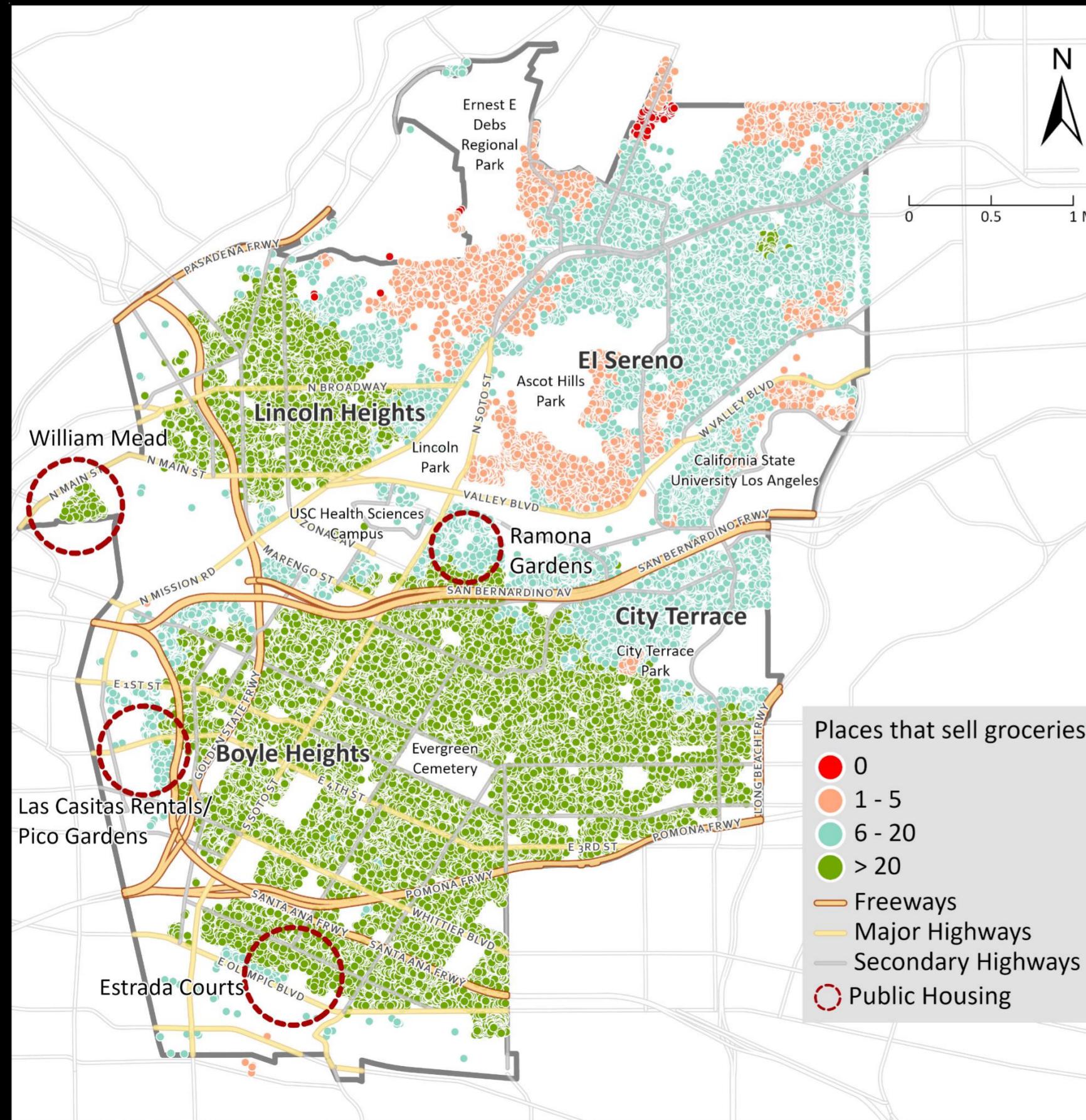
LOS ANGELES REGIONAL

FOOD
BANK

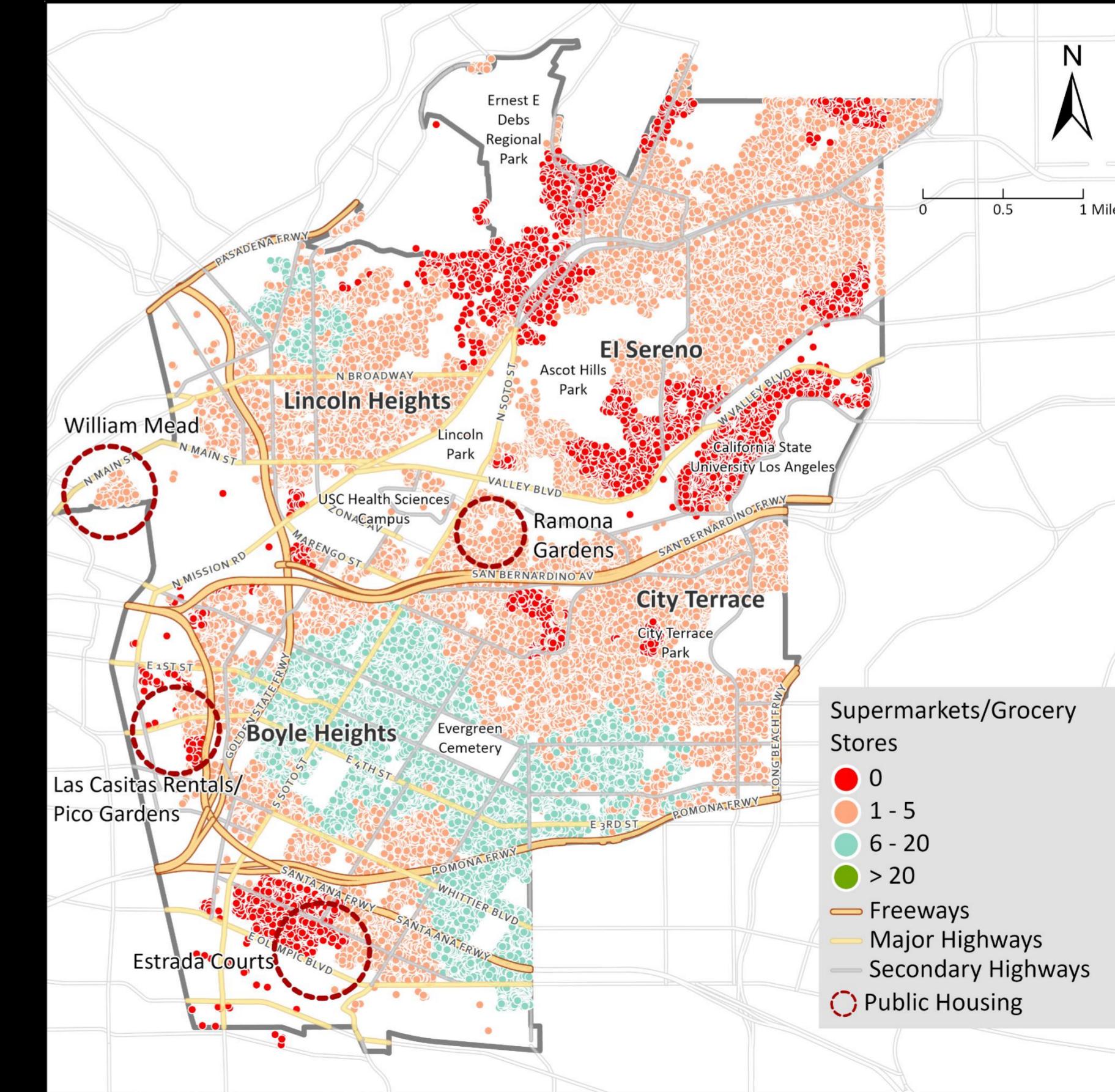
Fighting Hunger. Giving Hope.

Analysis of household “15-minute walkable cities” shows that many residents have good retail food access, but limited access to healthy food and groceries.

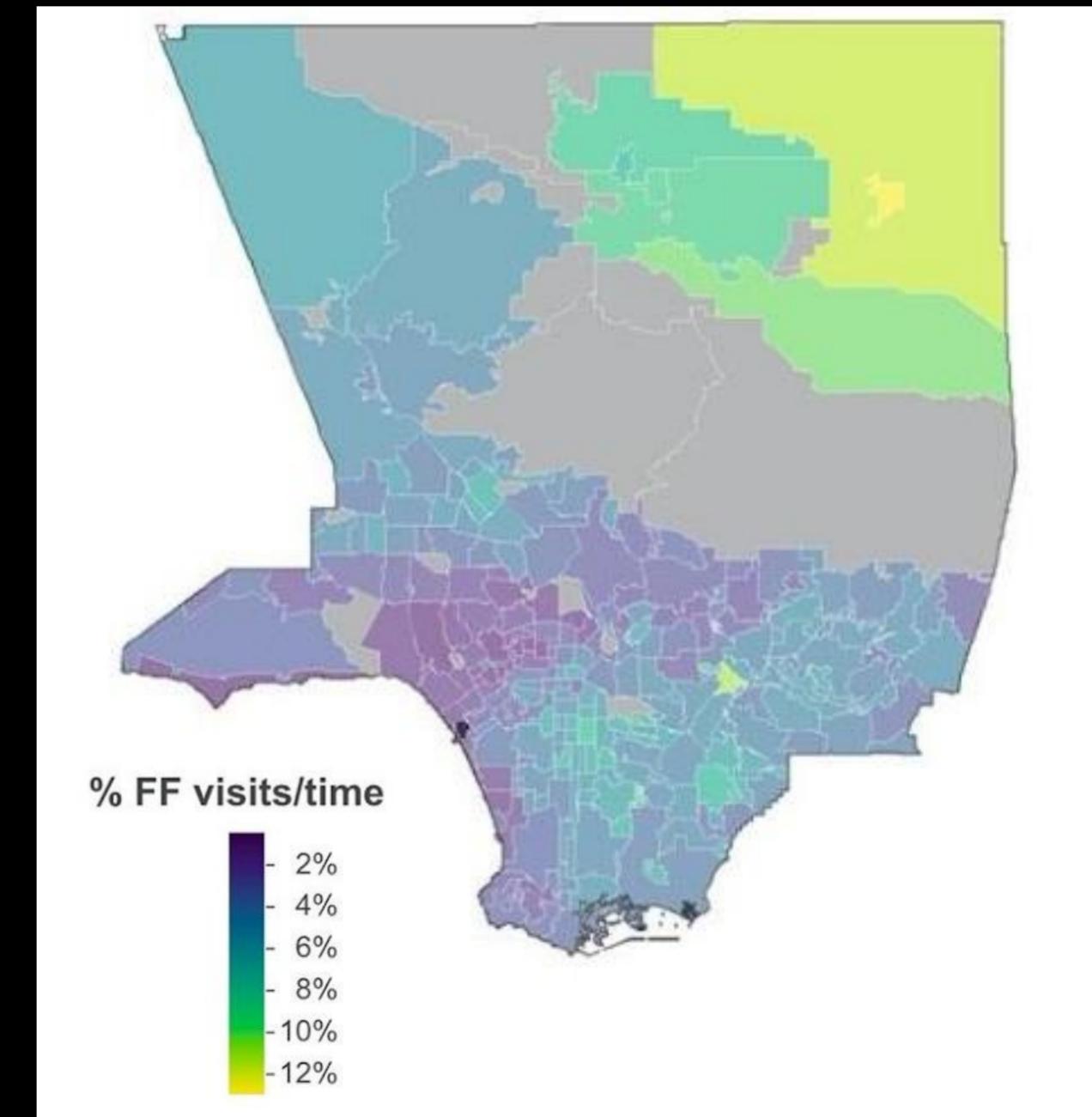
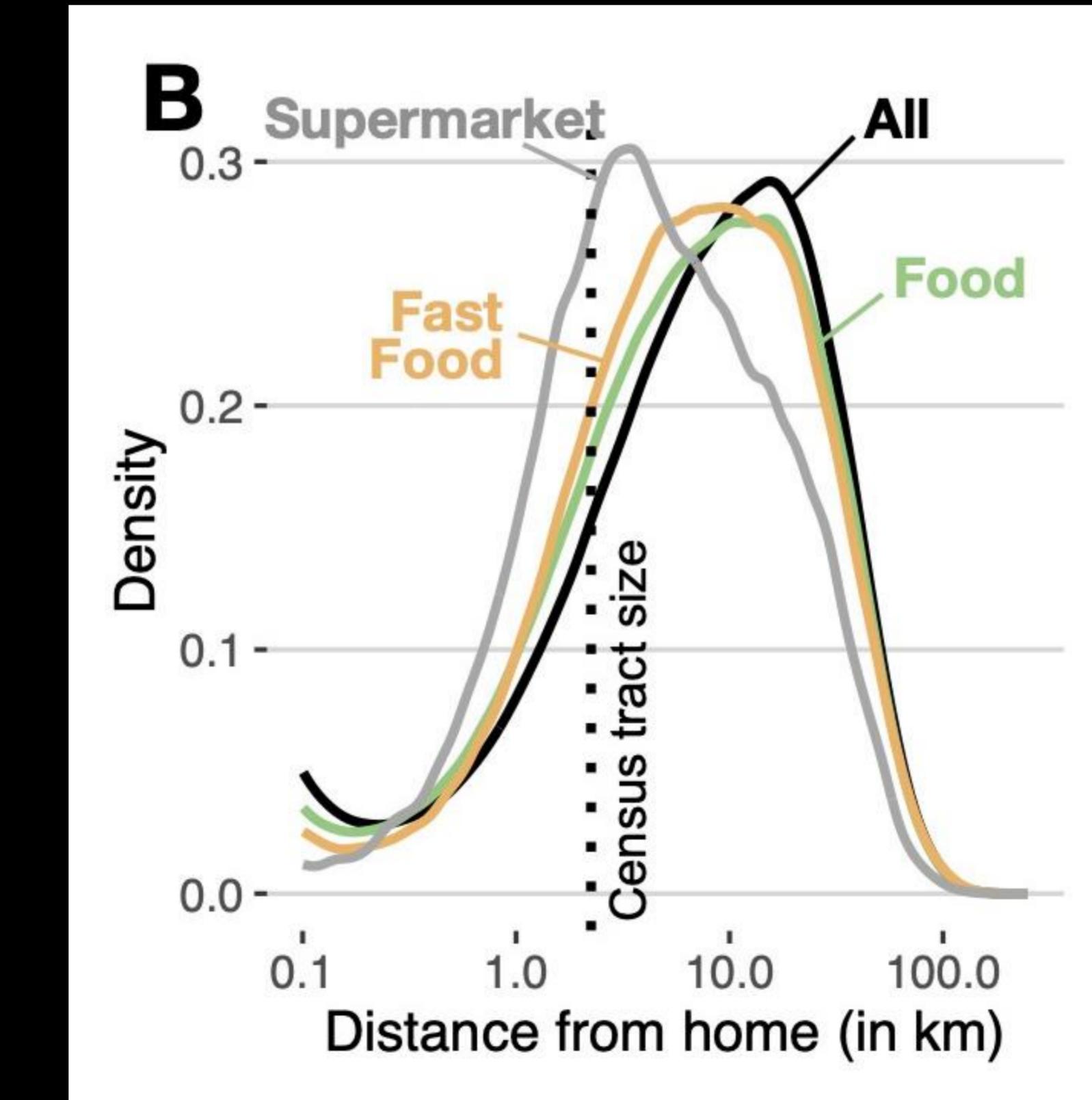
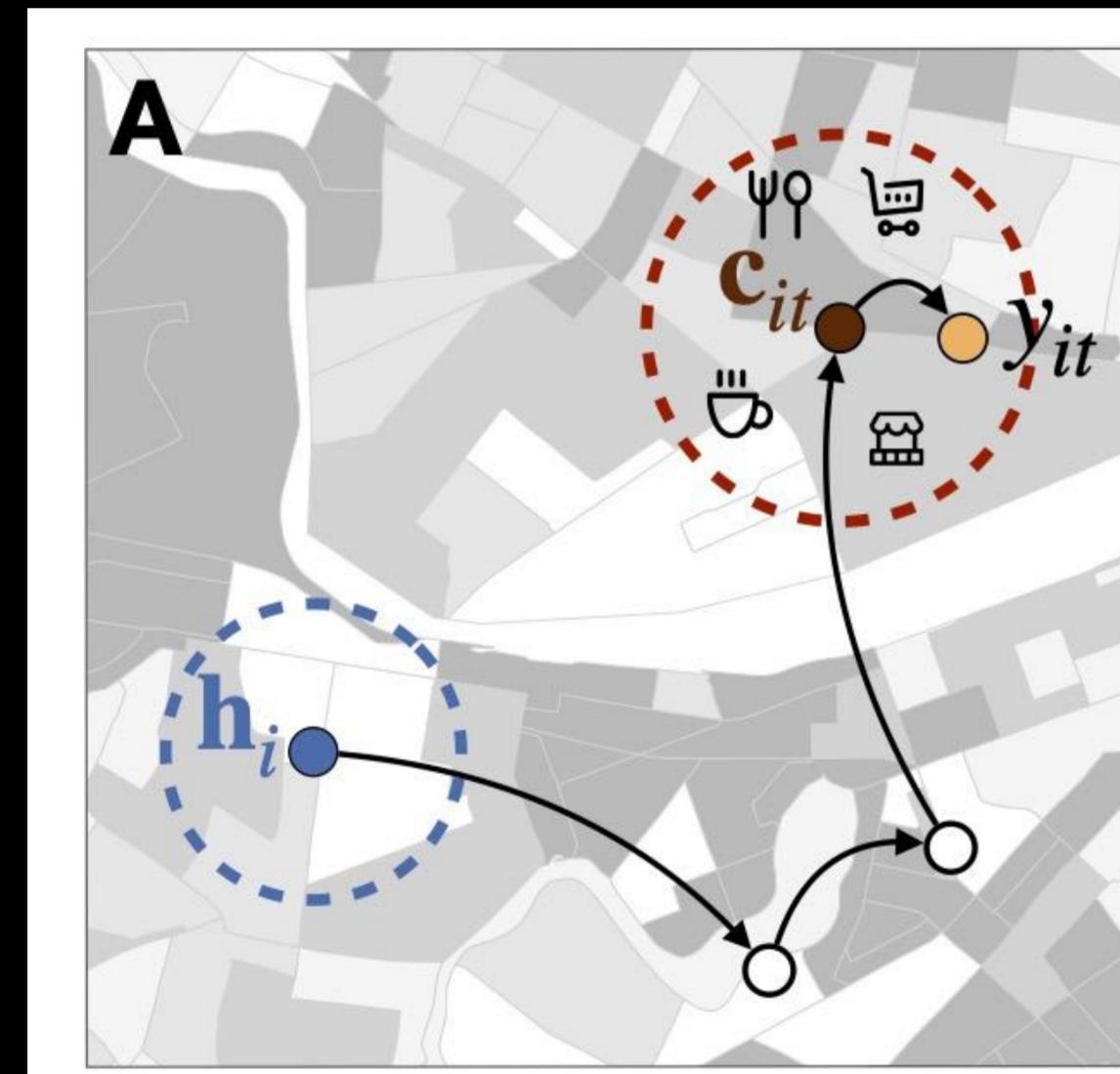
Access to Stores Selling Groceries in 15-Minute Walkable Cities



Access to Supermarkets/Grocery Stores in 15-Minute Walkable Cities

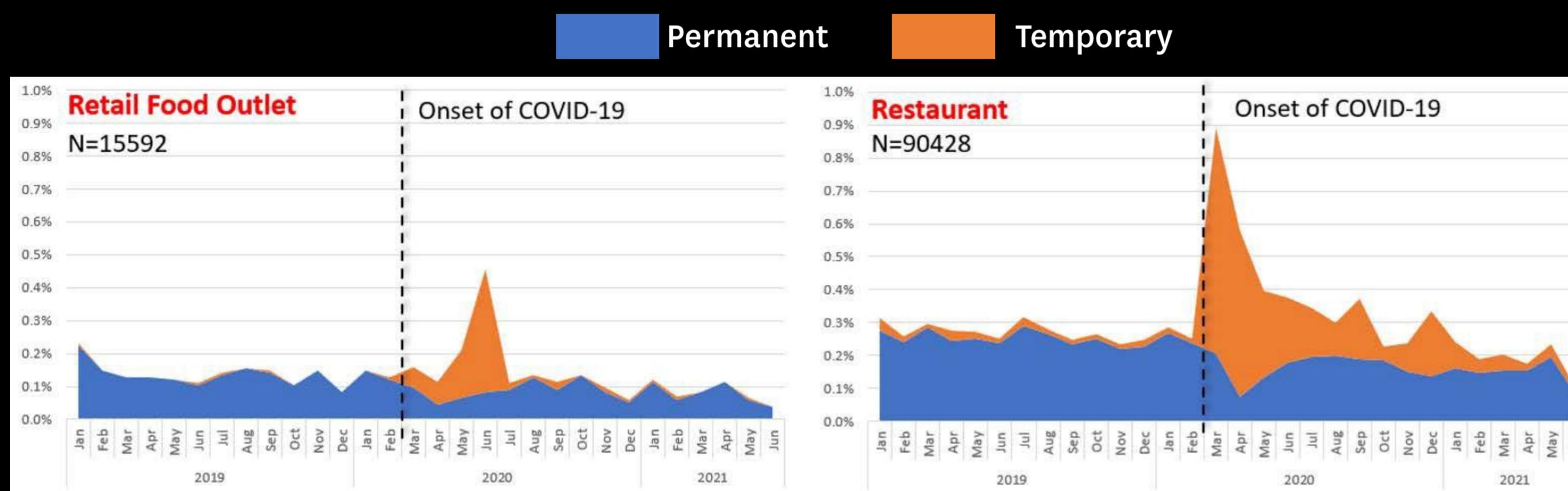


Mobility data show that food environments are not just in home neighborhoods: many are miles from home, and influence food choice.



The pandemic temporarily changed the food environment.

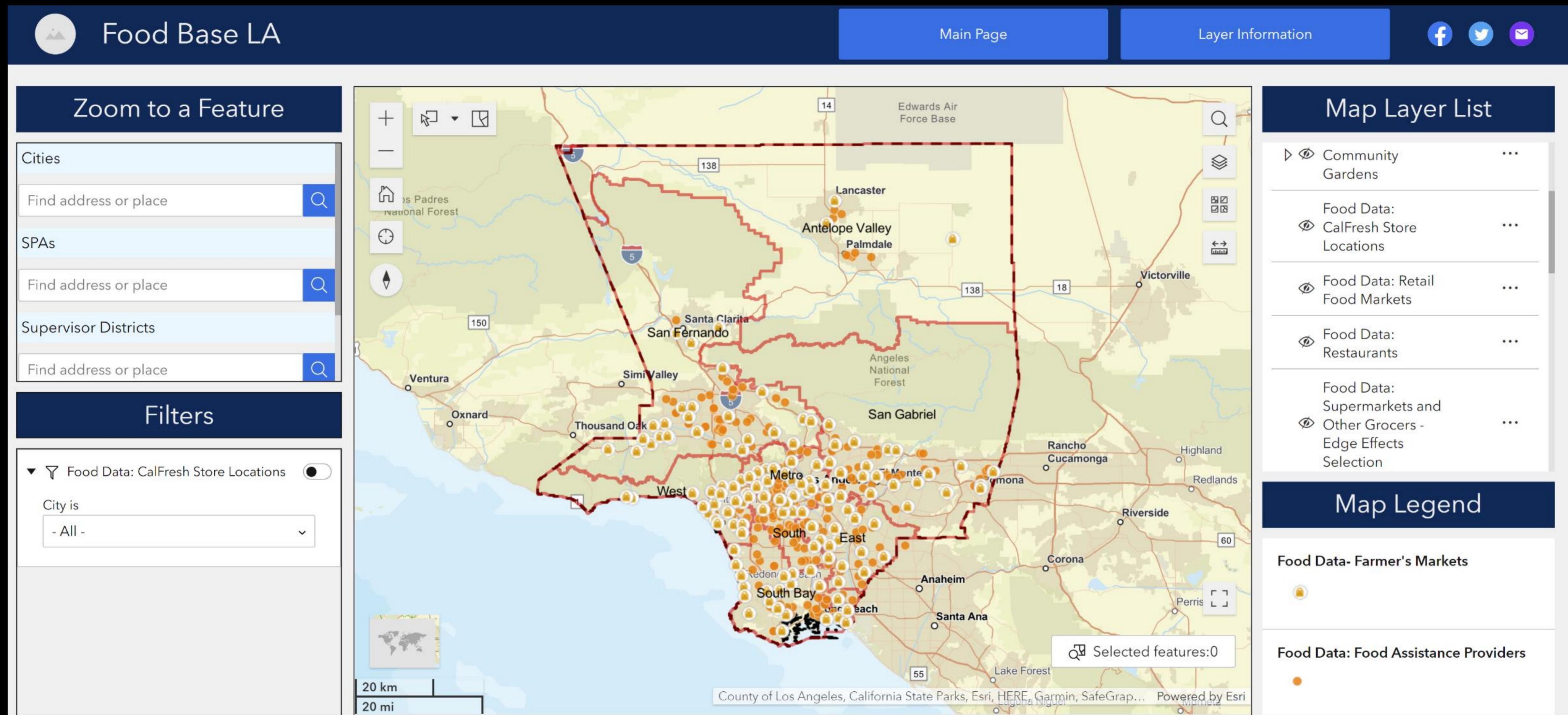
- 17% increase in food outlet closures
- Increase was driven by spikes in temporary closures
- Closures across L.A. County and in key food corridors



The percentage of food outlets with permanent and temporary closures for different food outlet categories from January 2019 to June 2021.



TRANSLATING FOOD SYSTEM INSIGHTS



Residents & Households

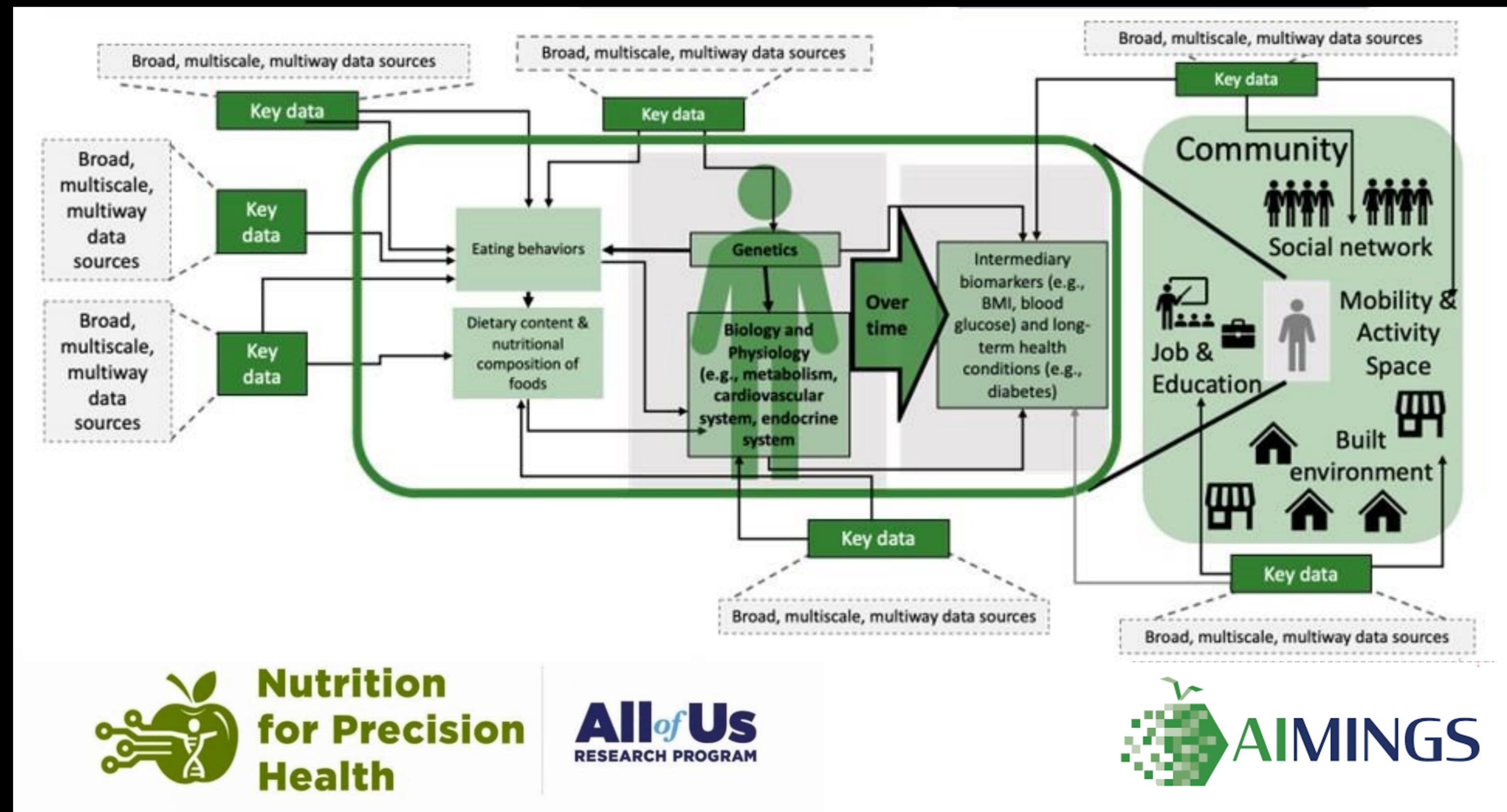
Food & Safety Net Programs

Food Environment

Community Resources & Landscape

TRANSLATING FOOD SYSTEM INSIGHTS

Virtual Laboratories: simulation models for precision nutrition and public health nutrition



OPPORTUNITY

Empower researchers and implementors to adopt **systems-thinking tools** and make **data-driven decisions** that transform food systems.

CHALLENGES TO ADDRESS

1. Invest in food system **data infrastructure** and **data brokers**

- build data partnerships to acquire public and private data
- build data ecosystems that are accessible to researchers and implementors

2. Invest in local **food systems science hubs**

- multi-disciplinary, multi-sector, *and* community-engaged
- utilize data ecosystems and translate systems thinking tools

3. Plan for **sustainability** and **scalability**

- sustainability beyond research projects
- scaling local prototypes with granular data to other regions



Thank you

