Feeding Northeast Florida: Finding Data-Driven Insights in the Fight Against Hunger

FEEDING® NORTHEAST FLORIDA

Community bank connecting food donors with distributors to ensure those in need have access to healthy meals.

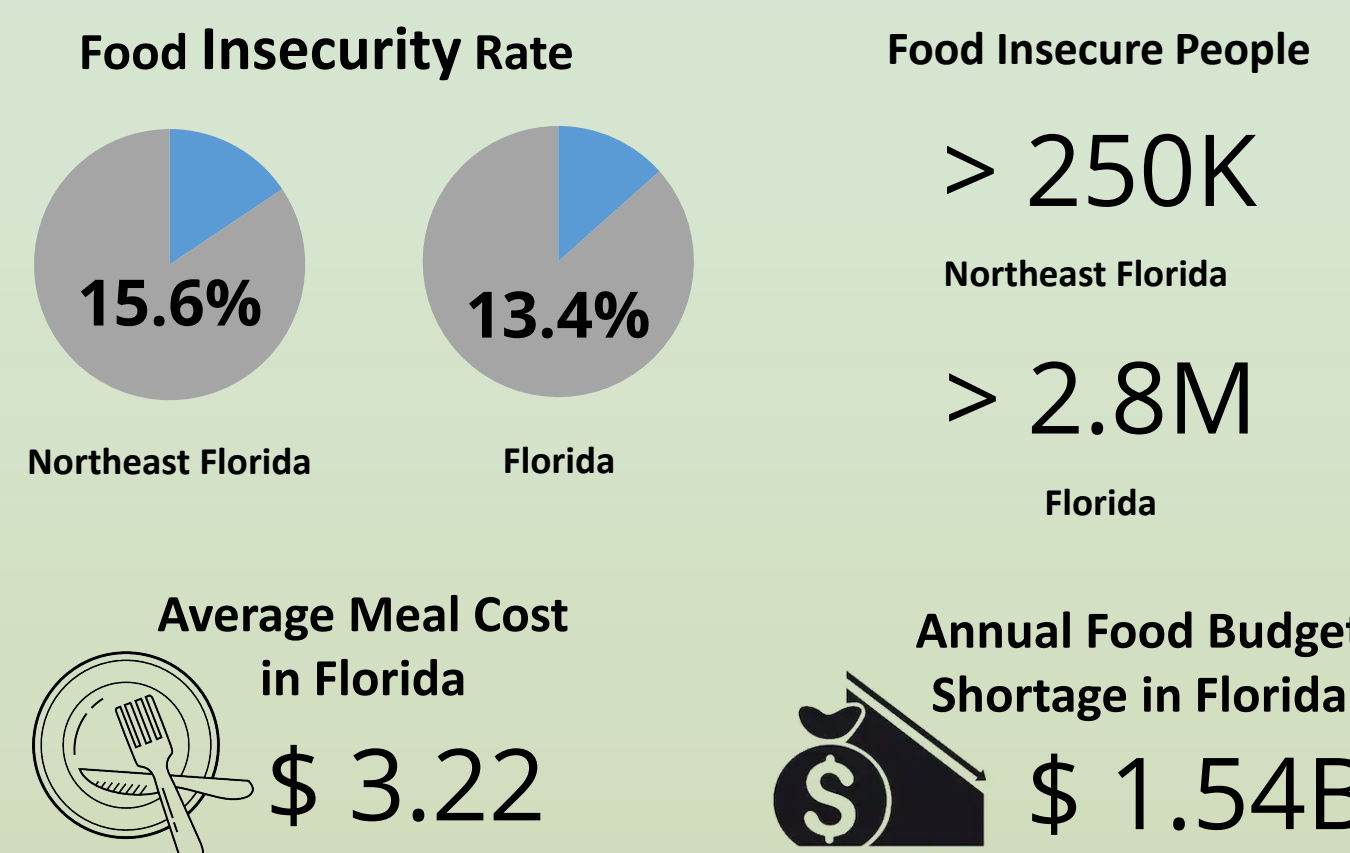**Gaining Insights on Food Insecurity and Food Desert Regions**

Transforming students into data scientists using collaborative community engaged projects.

Florida Data Science for Social Good

Community Partner

Where: Serves 8 counties in Northeast Florida region
How: Partners with 150+ grocery stores, retailers, manufacturers, and farms
Who: A part of Feeding America, a network of 200+ food banks
What: Provided more than 14.1M meals in 2018

Map the Meal Gap (Meal-Gap, 2019)

Food Insecurity Rate

15.6% Northeast Florida

13.4% Florida

Food Insecure People

> 250K Northeast Florida

> 2.8M Florida

Average Meal Cost in Florida
$ 3.22

Annual Food Budget Shortage in Florida
$ 1.54B

Social Issue

Food insecurity is defined by the U.S. Department of Agriculture (USDA) as "a household-level economic and social condition of limited or uncertain access to adequate food" for an active and healthy life (USDA-ERS, 2019a).

Food desert is defined by the USDA as low-income neighborhoods where a significant number of residents have limited access to healthy and affordable food sources (USDA-ERS, 2019b).
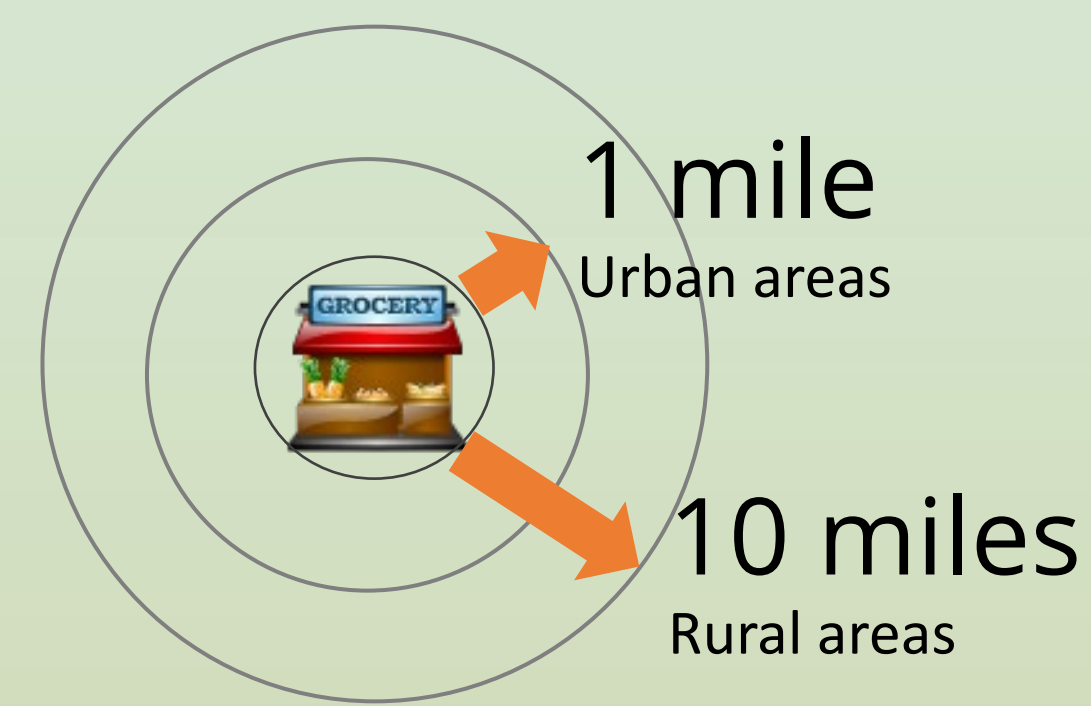
Low-income

Areas with

≥ 20% Poverty Rate

or Areas with residents median family income

≤ 80% State-wide median family income

Low-access

Measured as distance to healthy food access from a supermarket, supercenter, or large grocery store.

1 mile Urban areas

10 miles Rural areas

UNF

UNF Foundation funds 2019 program

Projects from nonprofits and government agencies

Local data scientists coach interns on best practices

UNF faculty provide subject-matter expertise

12 weeks summer internship

- Problem understanding
- Research inquiry
- Data preparation
June

- Statistical analysis
- Data modeling and mining
- Data visualization
July

- Dashboard development
- Storytelling (The Big Reveal)
- Project report
August

Problem

Integrating Disparate Datasets

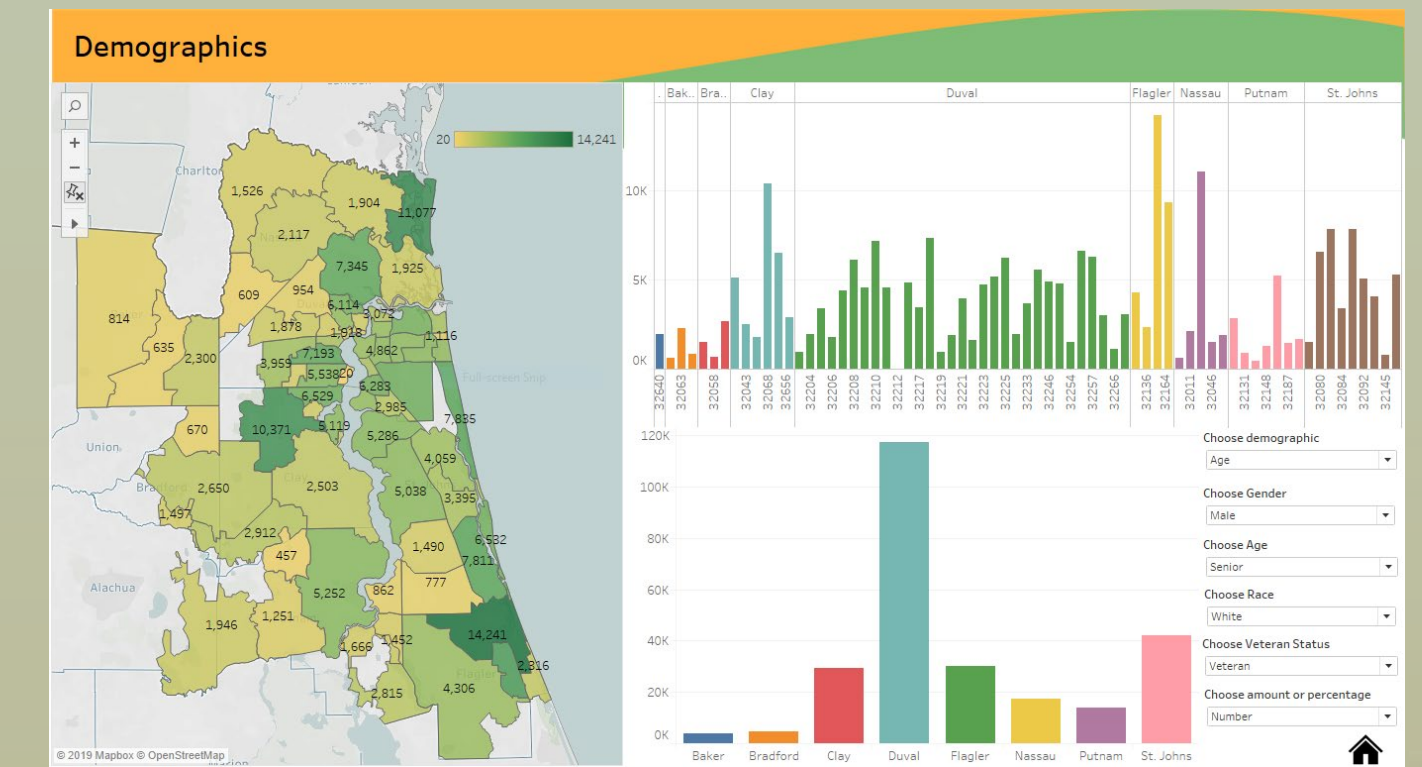### Supporting Grants and Operations Teams

Asking Questions and Data Drill-Down

Our Approach

Consolidating Data Sources:
- Regional socio-demographic data from Census track and ALICE reports
- Food donors and distributors data from Feeding Northeast Florida
- Food insecurity and food desert research data from USDA and Feeding America
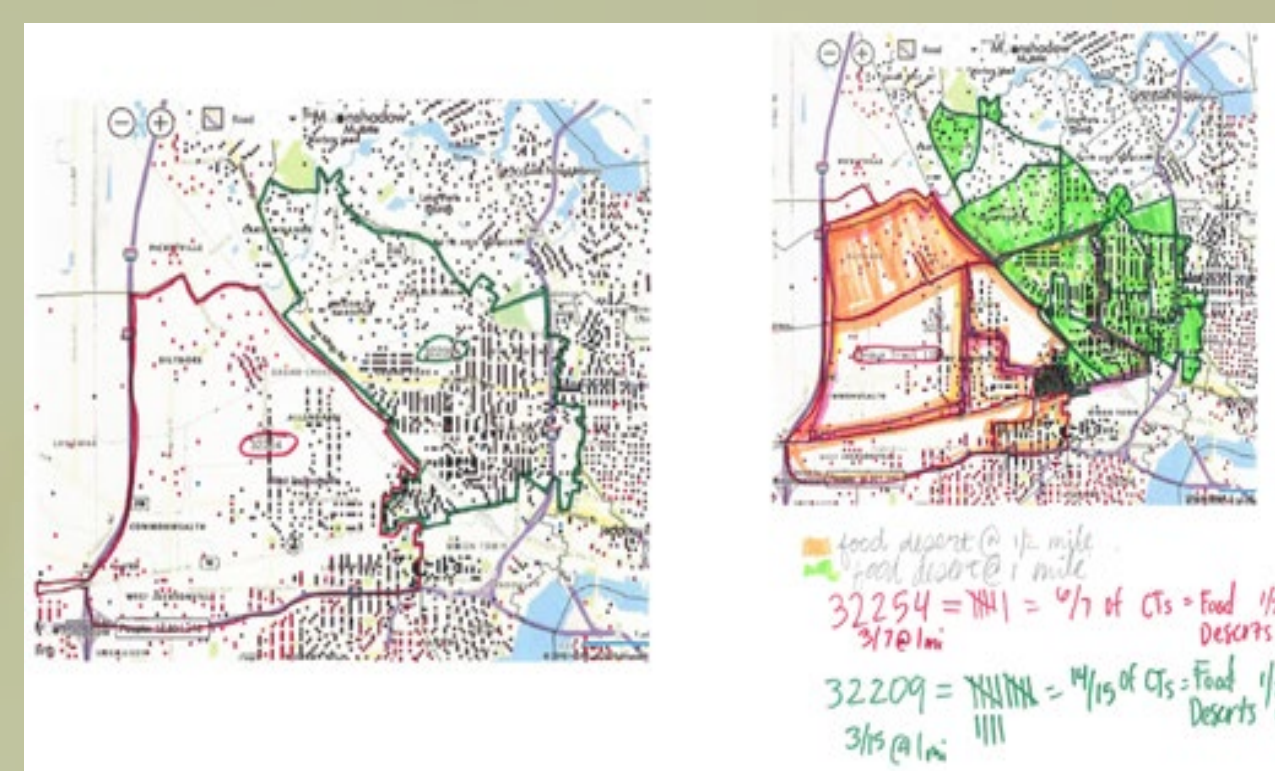
Aggregating census track reports to zip codes using ArcGIS

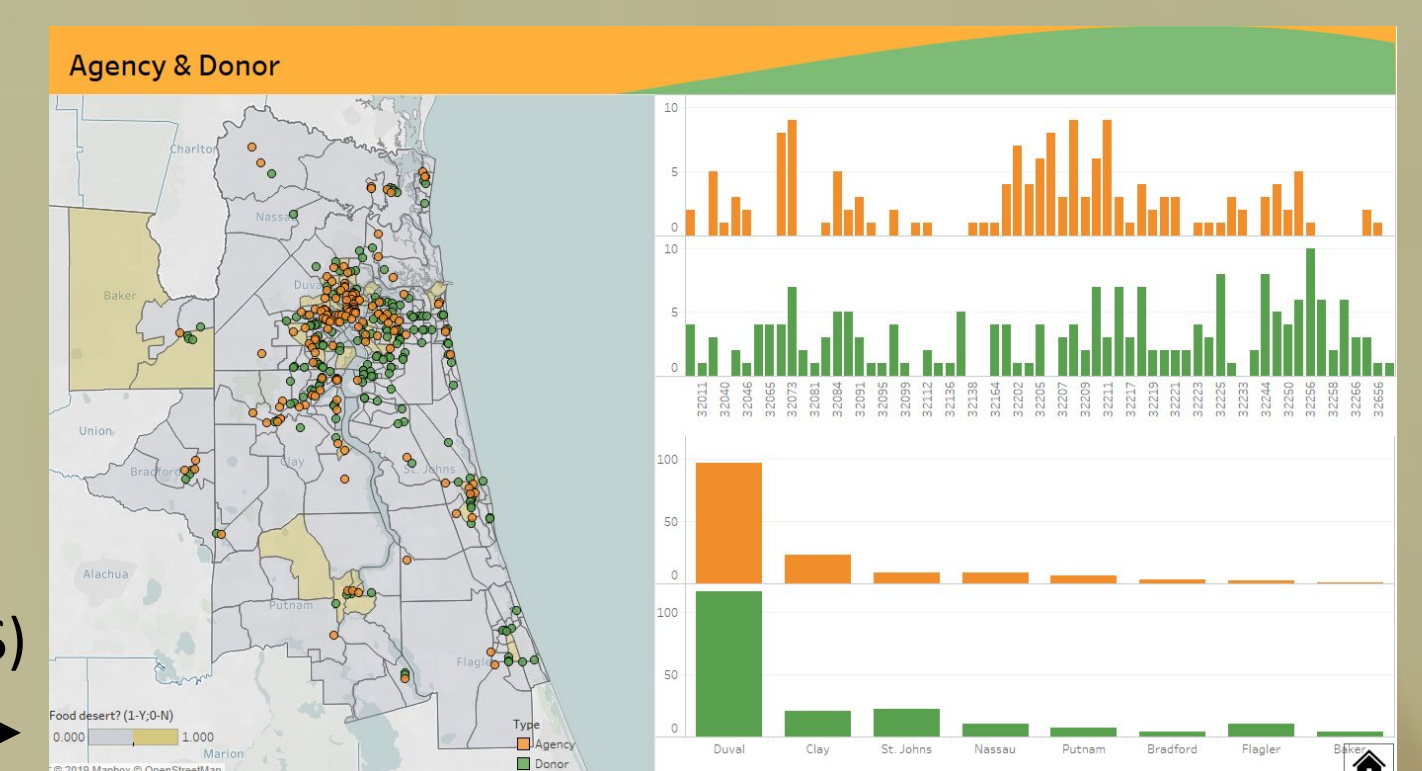**Converting donor and distributor agency address into geographic coordinates using Google Cloud Platform (GCP)**

Provide ability for **grants team** to **identify areas** in need and **estimate demand** for food

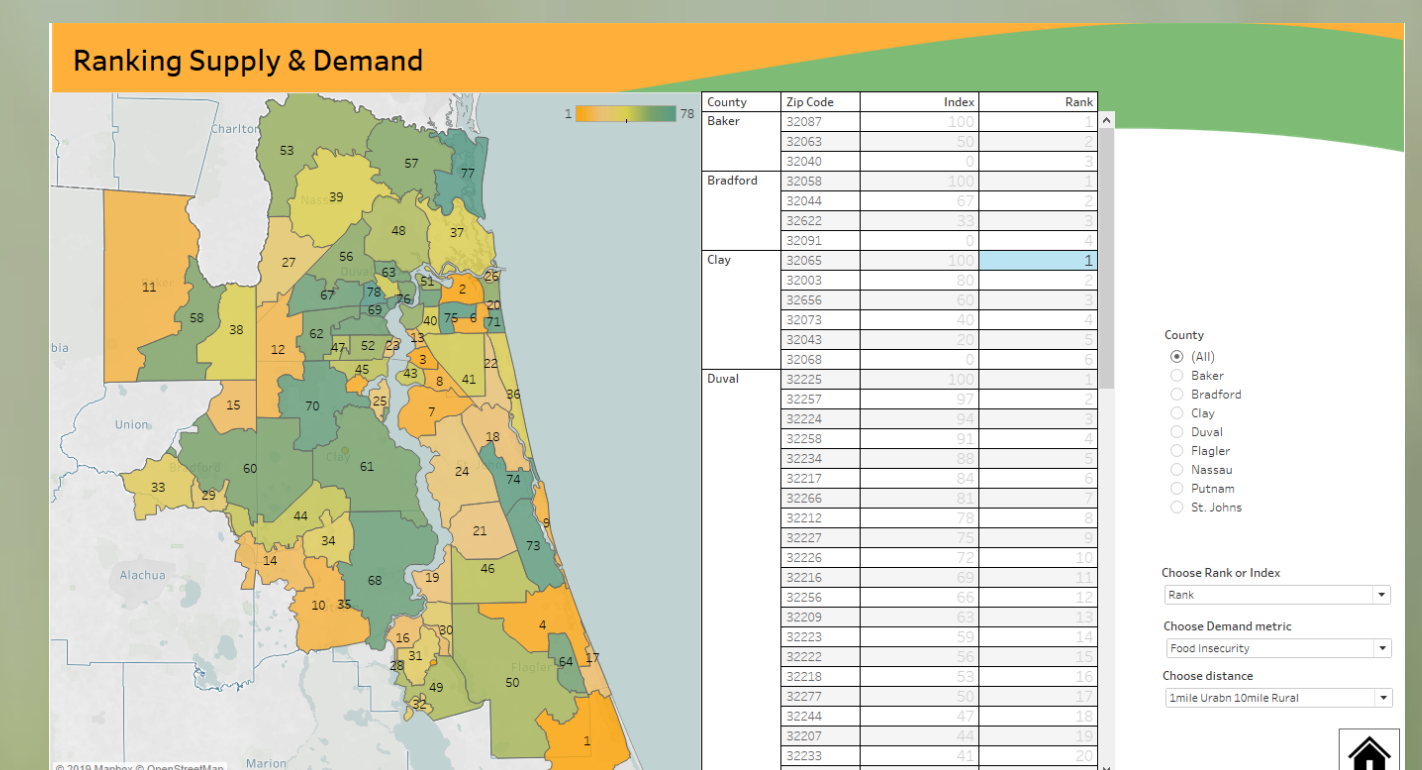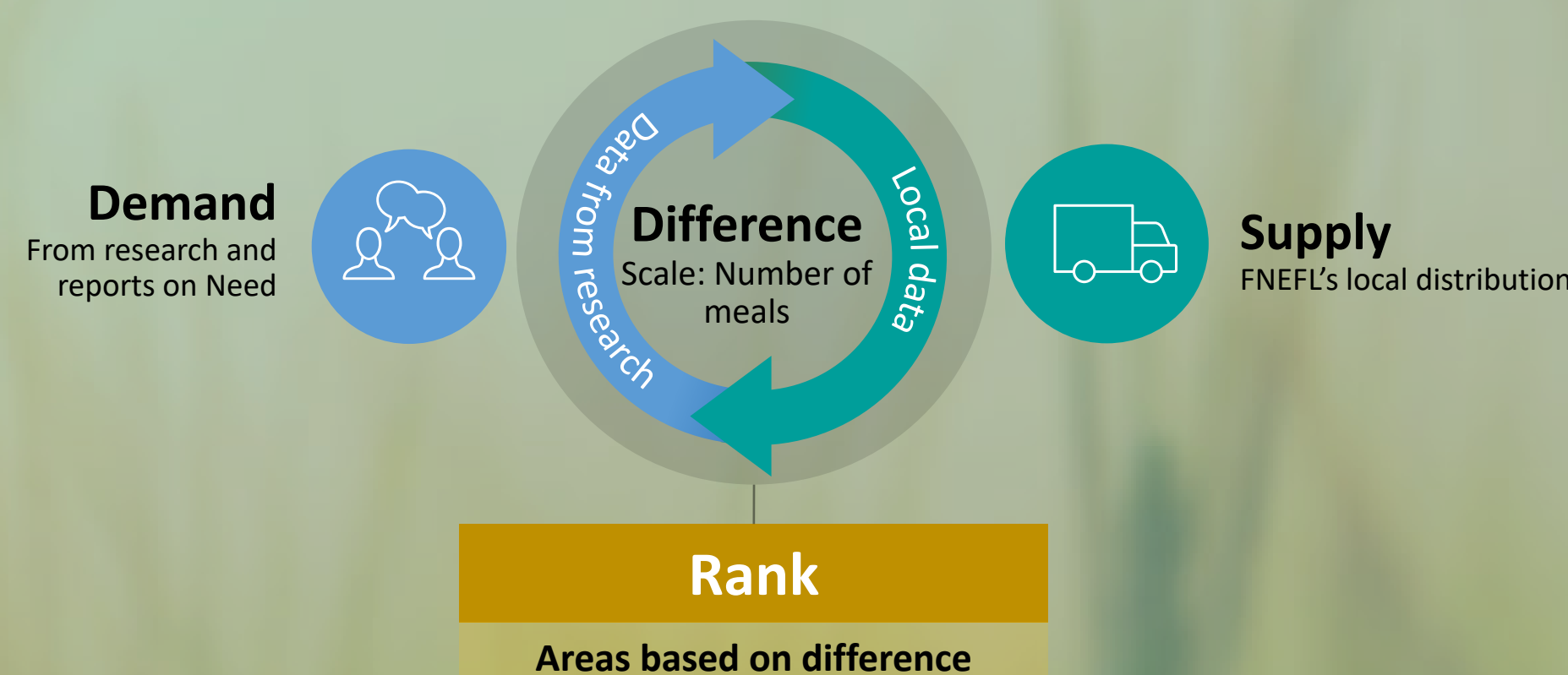Provide ability for **operations team** to **visualize demographic, food donors, and food distributor** information.

Digital Transformation Solution

Moving from mapping on paper

to a geographic information systems (GIS)

Ranking food desert regions based on **estimated demand and local supply of food.**

Ranking food desert regions based on **USDA research factors: low-income and low-access.**

Demand From research and reports on Need

Difference Scale: Number of meals

Data from research — Local data

Supply FNEFL's local distribution

Rank Areas based on difference

Dashboard

Demographics

Agency & Donor

Ranking Supply & Demand

References:
Meal-Gap (2019). Map the Meal Gap - Food Insecurity in The United States. Feeding America. https://map.feedingamerica.org/. Accessed October 24, 2019.
USDA-ERS (2019a). Definitions of food security. US Department of Agriculture, Economic Research Service. https://www.ers.usda.gov/topics/food-nutrition-assistance/food-security-in-the-us/definitions-of-food-security/. Accessed October 24, 2019.
USDA-ERS (2019b). Documentation for Food Access Research Atlas. US Department of Agriculture, Economic Research Service. https://www.ers.usda.gov/data-products/food-access-research-atlas/documentation/. Accessed October 24, 2019.

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