# New York State Food Supplier Map Project

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# Introduction

Food as Medicine, also commonly known as Food is Medicine, refers to a spectrum of health interventions and programs aimed at increasing access to nutritious foods and nutrition education to improve the health outcomes of food insecure individuals living with diet-related chronic disease. New York State Food as Medicine Coalition (NYS FAM Coalition) is a statewide network of food as medicine stakeholders promoting collaboration, resource-sharing, and advocacy to advance the integration of food as medicine into New York State policy and practice. The NYS FAM Coalition is a program of The Food Pantries for the Capital District.

The success of a food as medicine program relies on the ability to source high-quality, nutritious, fresh foods at a cost that meets the program's often limited budget. This can be a challenge for programs that typically rely on a single type of food supplier for their sourcing. For food as medicine programs and food pantries, food banks typically play this role. Food banks depend on a variety of sourcing pathways for their inventory, but these pathways are not always reliable. For example, if a program's local food bank suddenly loses a procurement pathway for fresh produce or whole grains, this can leave food programs with few options, ultimately leading to poor quality service for the community members in need. With the recent cuts to USDA funding for food banks (a primary source of food for many food assistance programs), the challenges have only grown (Costanzo, 2025; Douglas, et. al., 2025).

To address the increasing food procurement difficulties food pantries and food as medicine providers are facing, the NYS FAM Coalition initiated a project to gather data on wholesale, retail, and other business-to-business food suppliers across New York State that can provide appropriate foods for these programs. The project's primary goal was to create a publicly available directory of diverse food suppliers across the State so food assistance programs can have a centralized database for identifying alternative food sourcing options. A secondary aim of the project was to analyze the gathered data to identify geographic and programmatic gaps. By reviewing which areas of the state have fewer suppliers, and the types of suppliers available, more outreach could be conducted to fill in any gaps or inform advocacy priorities. The project concluded with the publication of an interactive NYS Food Supplier Map on Tableau Public for programs to easily access alternative food sourcing information.

This report discusses the methods used for data collection, shares key insights and findings, and proposes next steps for continued outreach and data gathering to make the NYS Food Supplier Map a more robust and comprehensive directory of available food sources.

# Methods

## Part 1) Data Collection

To compile data, project team members developed a survey tool in Jotform to collect data directly from food suppliers across the state. Jotform was chosen for its diverse functionality, including many options for question types, customizable graphic design, and ability to correct entry errors directly in the software using Jotform Tables.

An initial draft of the survey was shared with the NYS FAM Coalition's Program Implementation Subcommittee. This subcommittee, (which has now been restructured) was comprised of FAM implementation and program design experts from New York State, North Carolina, Iowa, and California. The project team used feedback from the subcommittee to refine the wording of survey questions for increased clarity, adjust question types to ensure the incoming data could be more easily analyzed, and include additional information to respondents on how their data would be used. The core data elements collected in the survey were:

1) The counties serviced by the supplier ("Counties Served" in the dataset)
2) The types of programs for which the supplier could provide food ("Supplies Food For" in the dataset)
3) The dietary needs the supplier could accommodate ("Dietary Accommodations" in the dataset)

The finalized Jotform survey was distributed to NYS FAM Coalition stakeholders, the NYS Dept. of Agriculture and Markets, the NYS Council on Hunger and Food Policy, and other networks. Responses were collected for an initial period of 3 weeks and then compiled, analyzed, and shared via the Tableau Public dashboard. After publishing the directory and interactive map, the project team conducted a second round of statewide outreach to continue gathering responses. The survey remains open and new suppliers continue to be added to the map as of this writing.

## Part 2) Data Cleaning and Transformation

Jotform Tables was used to review and filter the Jotform survey data. Duplicates were removed, unneeded columns were filtered out (such as respondent's name and phone number), and fixes were made to typos and other entry errors in the paragraph responses. Short-form "Other" responses for "Dietary Accommodations", were standardized.

After loading the data into Excel, the food suppliers were categorized by Supplier Type, and a Supplier Type variable was added as a new column to the dataset. Categories included grocery store, food hub, food rescue/recovery, food bank, etc. For a complete list of categories, see Appendix C. Then, Excel PowerQuery was used to transform the survey response data from the compressed, comma-separated format used by Jotform Tables into long form data for easier analysis and mapping later on.

Refer to appendix for further technical details regarding data cleaning methodology, including the transformed dataset structure, copies of the datasets, lists of variable categories used and the PowerQuery script.

## Part 3) Data Visualization and Analysis

After transforming the data in Excel PowerQuery, a data model was built in Tableau Public and the dataset was loaded into the model via a cloud-based extract. A map visualization was created to display the food supplier data geographically by county, with the density of food suppliers visualized using gradient coloring.

A separate worksheet was built to display a list of suppliers by county in table format. The table was connected to the supplier's Jotform submission URL for user access to the complete survey response from each organization, which contains more detailed information about each supplier. Both worksheets were merged into a Tableau dashboard, and filters were added for suppliers by county served, dietary accommodations available, and the types of programs the supplier can provide food for.

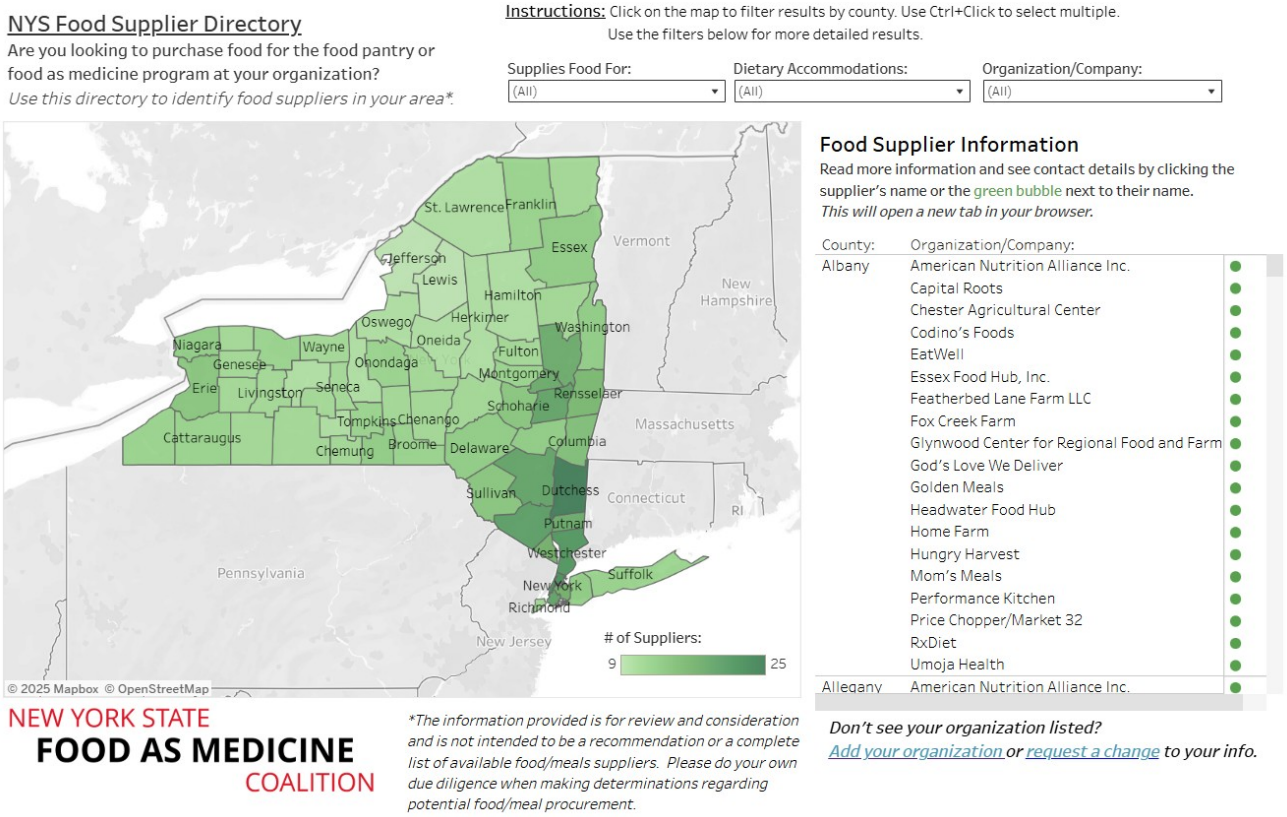
The interactive dashboard was reviewed by the project sponsor and other key stakeholders, and a final draft was published on the NYS FAM Coalition Website via Tableau Public embed. See Figure 1 in the Results section for a screenshot of the Tableau dashboard, and Appendix A for a web link to the Map

Next, a gap analysis was conducted. The goal of the analysis was to find geographic areas with lower numbers of available food suppliers to find which types of food suppliers were underrepresented. RStudio was chosen as the analysis tool because of its robust functionality in data manipulation and transformation, and its integrated visualization tools. The R packages utilized were `janitor` for cleaning column names, `tidyverse` for transforming and manipulating dataframes, and `ggplot2` for visualizations. To review the R script used in this analysis, refer to the Appendix D.

The analyses performed included an assessment of food suppliers per county, and types of suppliers. Geographic trends were identified. Distinct trends and gaps in the types of suppliers were identified as well. These findings are discussed in more detail in the Discussion section.

# Results

**Figure 1.** A screenshot of the Tableau Public interactive dashboard. For a link to the live dashboard, refer to Appendix A.




Data from fifty-one completed food supplier surveys were added to the directory. Three duplicate survey submissions were excluded. Survey results showed that every county in the state has food supplier service coverage. Most of the food suppliers (n=42) indicated they provide services to more than one county, with the remainder (n=9) only providing services to a single county.

The counties with the lowest supplier count were Jefferson and Lewis (n=9). The county with the highest supplier count was Dutchess (n=25). The map gradient shows the darkest shading in the New York City and Hudson Valley regions, indicating higher numbers of food suppliers in that area. On the contrary, the gradient shows the lightest shading in the North Country and Central New York regions, indicating lower numbers of suppliers.

**Figure 2.** A bar chart with the highest five counties by count of suppliers. Dutchess (n=25), Bronx (n=22), New York (n=22), Westchester (n=21), Orange (n=20).

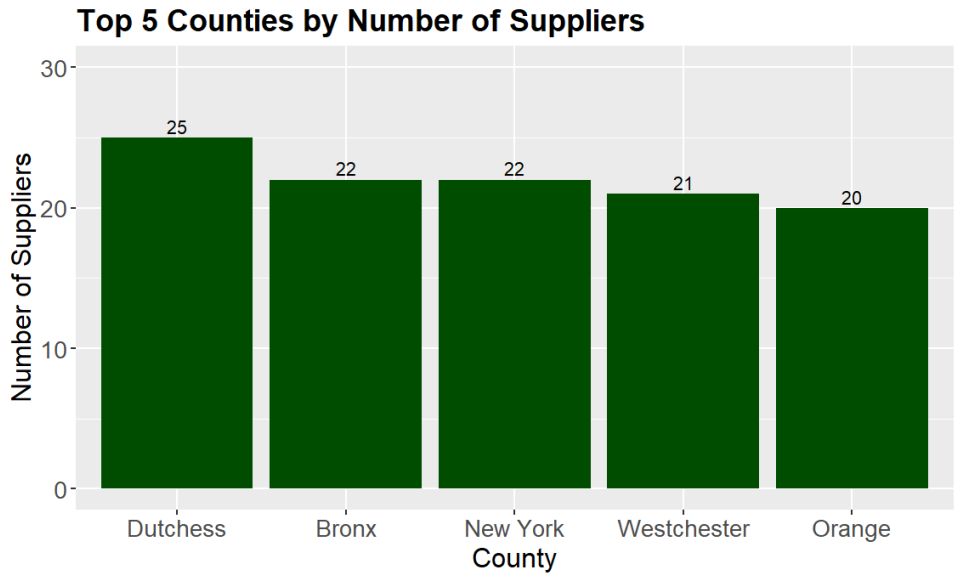



**Figure 3.** A screenshot of the NYS Food Supplier Map with the highest five counties by count of suppliers selected. The counties are centered around New York City and the lower Hudson Valley.

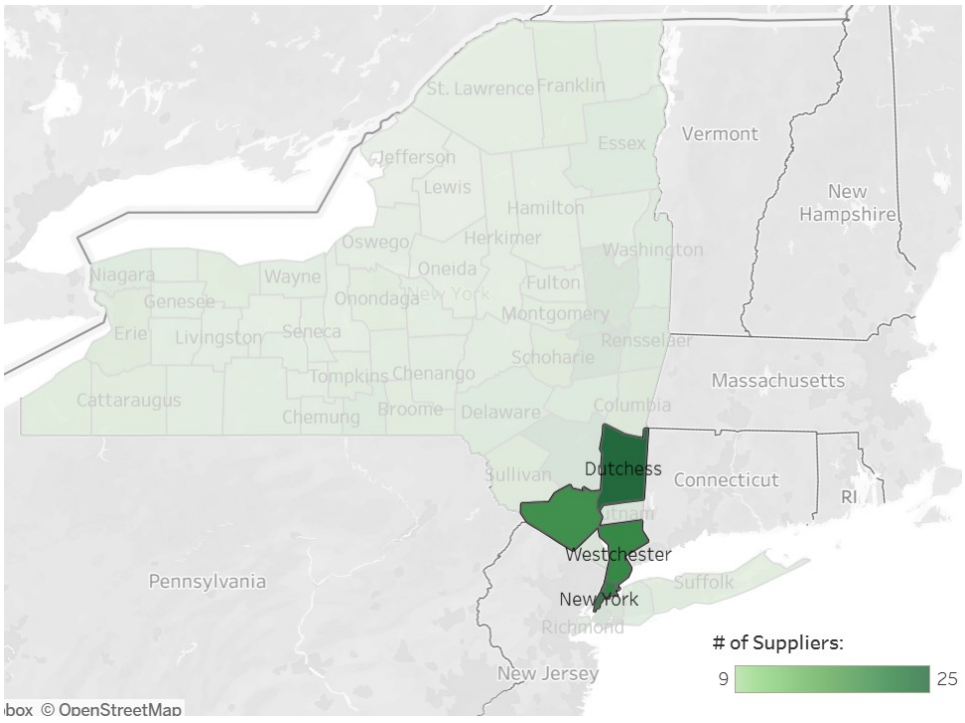


**Figure 4.** A bar chart with the 5 lowest counties by count of suppliers. Oswego (n=10), Schuyler (n=10), St. Lawrence (n=10), Jefferson (n=9), Lewis (n=9).

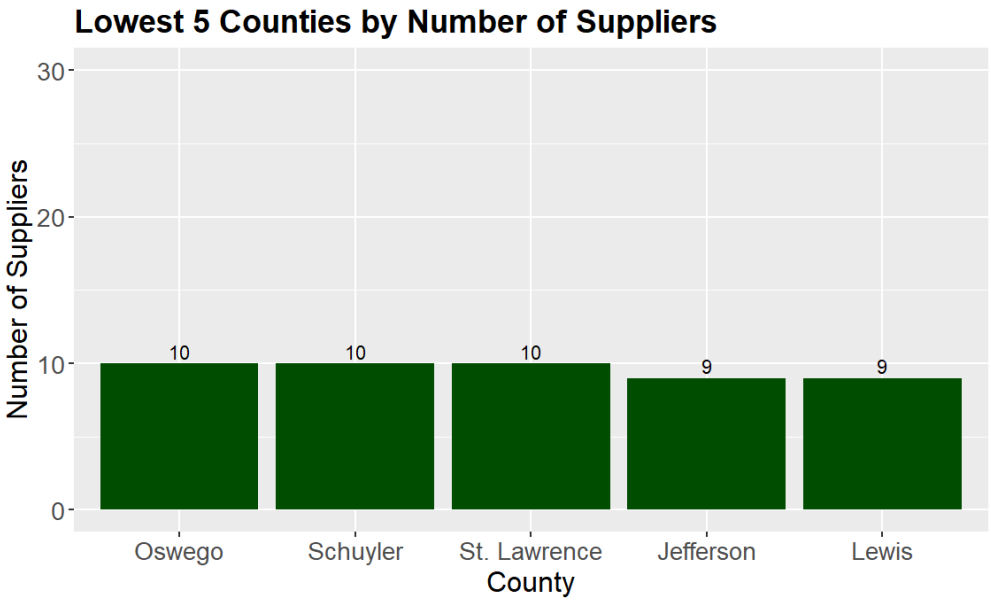



**Figure 5.** A screenshot of the NYS Food Supplier Map with the lowest five counties by count of suppliers selected.

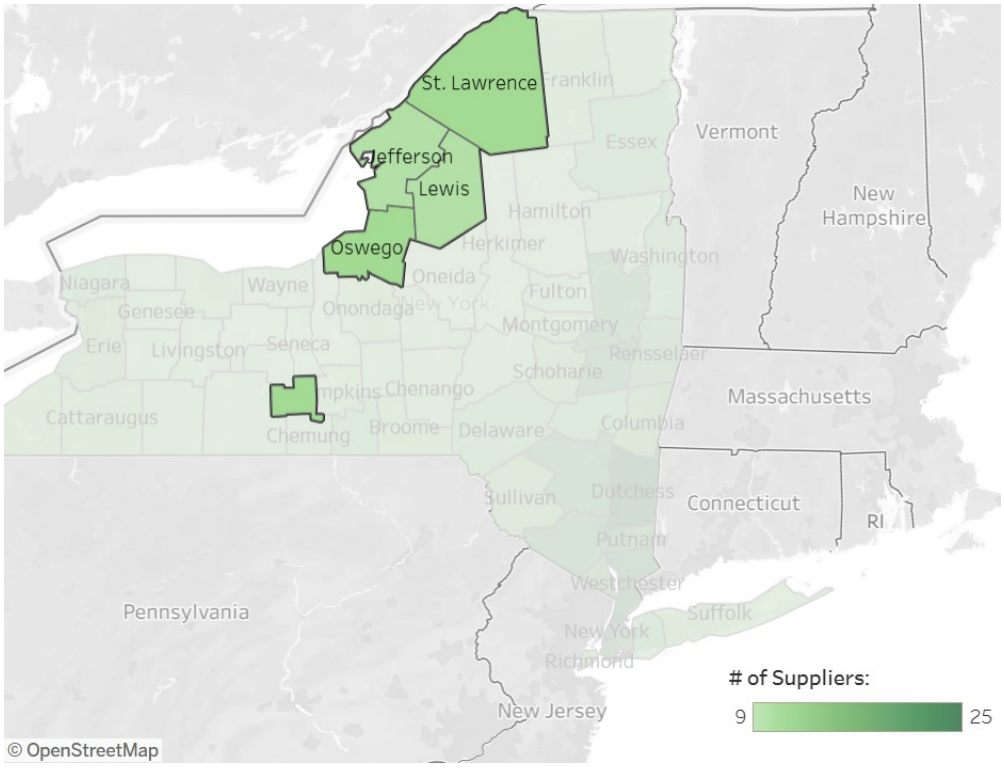


**Figure 6.** A bar chart displaying the count of suppliers by supplier type. Counts ranged from n=19 (Farms) to n=1 (wholesalers).

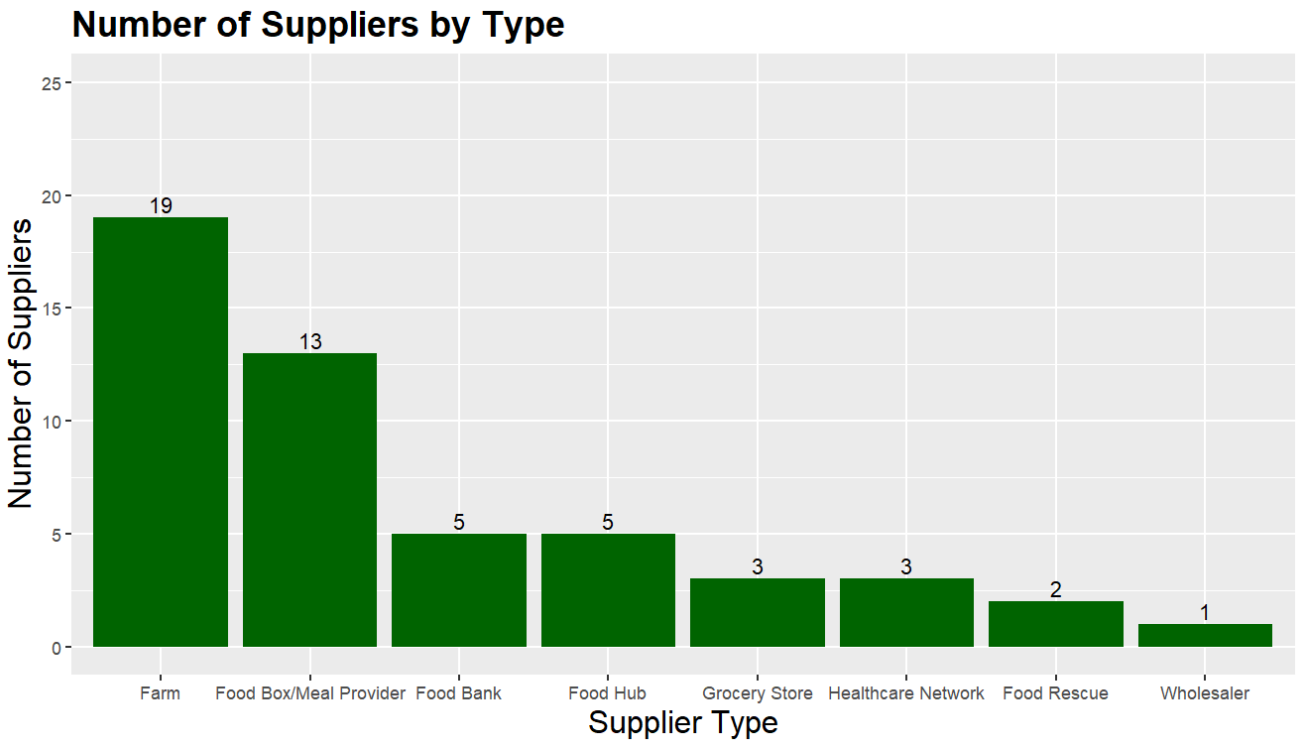



**Figure 7.** A table displaying the count of suppliers by supplier type.

| Supplier Type | Count |
|---|---|
| Farm | 19 |
| Food Box/Meal Provider | 13 |
| Food Bank | 5 |
| Food Hub | 5 |
| Grocery Store | 3 |
| Healthcare Network | 3 |
| Food Rescue | 2 |
| Wholesaler | 1 |

# Discussion

The the NYS Food Supplier Map was launched publicly in March of 2025. The map was shared with NYS FAM Coalition members and stakeholders. Various external stakeholder groups endorsed the Map and shared it among their networks as a useful tool for food sourcing. These stakeholder groups included the NYS Council on Hunger and Food Policy and the Federal Nutrition Advisory Coalition managed by the Food is Medicine Institute at Tufts University. The Jotform survey continues to receive new submissions as a result of the wide reach of these networks.

The results of the R analysis indicate clear trends and gaps in the survey data. Figures 2 and 3 indicate the highest density of supplier data is centered on New York City and the lower Hudson Valle. Figures 4 and 5 indicate the lowest density of suppliers is centered in the North Country and Central New York. It is possible the low number of survey responses in these areas is due to actual lower numbers of food suppliers. However, the low numbers may alternatively be due to less successful outreach in these areas. Therefore, it is recommended that future outreach efforts focus on the North Country and Central New York regions to determine the cause of these low numbers and potentially fill in the gap areas, ensuring adequate food supplier coverage.

In addition, figure 6 indicates that Farms (n=19) and Food Box/Meal Suppliers (n=13) make up the highest number of suppliers by type, while Wholesalers (n=1) and Food Rescues (n=2) represent the lowest number of suppliers. Therefore, it is recommended that future outreach efforts target Wholesalers, Food Rescues, and other lower count supplier types to encourage a more even distribution of diverse supplier types. Increasing the diversity of food suppliers would advance the goal of the project by providing more food sourcing opportunities to FAM programs and food pantries.

# Conclusion

The New York State Food Supplier Map is a useful tool for analyzing trends and gaps in food suppliers across the state. In a food system that is encountering growing difficulties, it is an easy pathway for food assistance programs, such as food pantries and FAM programs, to find a diversity of food suppliers from which to source products. However, further outreach should be done to ensure that all regions of the state have adequate coverage on the map, and to increase the diversity of supplier types available.

# References

Costanzo, C. (2025, April 9). *Seven Takeaways on the Federal Funding Cuts - Food Bank News*. Food Bank News. https://foodbanknews.org/seven-takeaways-on-the-federal-funding-cuts/

Douglas, L., Huffstutter, P. J., & Hickman, R. (2025, March 25). *Trump cuts hit struggling food banks, risking hunger for low-income Americans.* Reuters. https://www.reuters.com/world/us/trump-cuts-hit-struggling-food-banks-risking-hunger-low-income-americans-2025-03-25/

# Appendix

## A. Technical Documentation

**Tableau Public Dashboard (Static Copy):**

https://public.tableau.com/app/profile/victor.russak/viz/NYSFAMCoalitionFoodSupplierMap/Dashboard1

**Jotform Survey Tool:**

https://form.jotform.com/242766467488071

**Dataset for Tableau Public Data Model:**

https://690f3218-4e9b-4f0c-8da5-9d12749e6b72.usrfiles.com/ugd/690f32_051e58ff4c4a4be5bb232d5933f88a62.xlsx

**Tableau Workbook:**

Available to download from the Tableau Public Viz

**Dataset used in R:**

https://690f3218-4e9b-4f0c-8da5-9d12749e6b72.usrfiles.com/archives/690f32_60ce9f0b2f1b4745bf6c44b947f5f51c.zip

**Instructions for Adding Data to the Map:**

https://690f3218-4e9b-4f0c-8da5-9d12749e6b72.usrfiles.com/ugd/690f32_61af36af2a28487d9f5374e6ed121732.docx

## B. Structure of the Dataset Loaded into the Tableau Data Model

*Column names cleaned using R package "janitor".*

23,718 Observations of 6 Variables

| Variable Name | Data Type | Description |
|---|---|---|
| [1] "organization_company" | String/Character | The name of the food supplier organization or company |
| [2] "supplier_type" | String/Character | The type of supplier |
| [3] "county" | String/Character | The county served by the supplier |
| [4] "supplies_food_for" | String/Character | The type of food assistance program the supplier provides food for. |
| [5] "dietary_accommodations" | String/Character | The dietary accommodations available with the supplier. |
| [6] "contact_and_additional_information" | String/Character | A URL to the live Jotform submission of the supplier to view additional information. |

## C. Category Lists

**Supplier Type**

| Category Name | Description |
|---|---|
| Farm | An area of land and its buildings used for growing crops and rearing animals |
| Food Box/Meal Provider | An organization or company that provides pre-packed grocery boxes or prepared meals, usually delivered directly to consumer |
| Food Bank | A non-profit organization that distributes food wholesale to food pantries, soup kitchens, and other emergency feeding programs |
| Food Hub | An organization that procures food from local growers and producers and distributes wholesale and retail |
| Grocery Store | A store that sells fresh foods, non-perishable foods, and household goods |
| Healthcare Network | A group of healthcare providers that have contracted with a health insurance plan to provide medical services at negotiated rates |
| Food Rescue | An organization that gleans edible food that would otherwise go to waste from places such as farms, produce markets, grocery stores, restaurants, or dining facilities and distributes it |

| | |
|---|---|
| | to local emergency food programs |
| Wholesaler | A company that sells foods in large quantities at low prices, typically to retailers. |

**Supplies Food For**

| Program Type | Description |
|---|---|
| Clinically Appropriate Home Delivered Meals | Fully prepared, home-delivered meals that meet general health recommendations such as the federal Dietary Guidelines for Americans |
| Culturally Tailored Food Boxes | Food boxes including produce, dairy, meat, and non-perishable goods that are tailored to an individual's religious, cultural, or ethnic dietary preferences. |
| Culturally Tailored Meals | Prepared meals including produce, dairy, meat, and non-perishable goods that are tailored to an individual's religious, cultural, or ethnic dietary preferences. |
| Medically Tailored Home Delivered Meals | Fully prepared, home-delivered meals, tailored by a registered dietitian to the medical needs of individuals living with severe chronic illness or have been recently discharged from an inpatient hospital stay. |
| Medically Tailored or Clinically Appropriate Food Prescription - Food Boxes | Healthy, unprepared food items preselected by a registered dietitian or other qualified professional, sufficient to prepare nutritionally complete meals that are tailored to specific diagnoses and medical needs (medically tailored) or meet general health recommendations such as the federal Dietary Guidelines for Americans (clinically appropriate). |
| Medically Tailored or Clinically Appropriate Food Prescription - Vouchers | Vouchers which can be used to purchase nutritious foods at participating retails, farmer's markets, and other suppliers. |
| Pantry Stocking | Food boxes including fresh produce and non-perishable grocery items that meet general health recommendations, such as the federal Dietary Guidelines for Americans. Does not include dairy, meat, or other protein items. |

**Dietary Accommodations**

Dietary Accommodations categories listed on the map include:

- Dairy Free
- Egg Free
- Gluten Free
- Halal
- Kosher
- Low FODMAP
- Nut Free
- Peanut Free
- Pork Free
- Soy Free
- Vegan
- Vegetarian
- Other

## D. Code/Scripts

**PowerQuery Code**

*This code was used in Excel PowerQuery to transform the raw survey data from Jotform into long format, and perform a preliminary cleaning of the data. Code was generated using Excel's built-in Query Editor User Interface. Download .txt file: [https://690f3218-4e9b-4f0c-8da5-9d12749e6b72.usrfiles.com/ugd/690f32_4f5378cade5b45549277871be909a7b7.txt](https://690f3218-4e9b-4f0c-8da5-9d12749e6b72.usrfiles.com/ugd/690f32_4f5378cade5b45549277871be909a7b7.txt)*

```
= Excel.CurrentWorkbook(){[Name="Table3"]}[Content]
```

```
= Table.TransformColumnTypes(Source,{{"Organization/Company:", type text}, {"County:", type text}, {"Supplies Food For:", type text}, {"Dietary Accommodations:", type text}, {"Contact and Additional Information:", type text}})
```

```
= Table.ExpandListColumn(Table.TransformColumns(#"Changed Type", {{"County:", Splitter.SplitTextByDelimiter(",", QuoteStyle.Csv), let itemType = (type nullable text) meta [Serialized.Text = true] in type {itemType}}}), "County:")
```

```
= Table.TransformColumnTypes(#"Split Column by Delimiter",{{"County:", type text}})
```

```
= Table.ExpandListColumn(Table.TransformColumns(#"Changed Type1", {{"Supplies Food For:", Splitter.SplitTextByDelimiter(",", QuoteStyle.Csv), let itemType = (type nullable text) meta [Serialized.Text = true] in type {itemType}}}), "Supplies Food For:")
```

```
= Table.TransformColumnTypes(#"Split Column by Delimiter1",{{"Supplies Food For:", type text}})
```

```
= Table.ExpandListColumn(Table.TransformColumns(#"Changed Type2", {{"Dietary Accommodations:", Splitter.SplitTextByDelimiter(",", QuoteStyle.Csv), let itemType = (type nullable text) meta [Serialized.Text = true] in type {itemType}}}), "Dietary Accommodations:")
```

```
= Table.TransformColumnTypes(#"Split Column by Delimiter2",{{"Dietary Accommodations:", type text}})
```

```
= Table.TransformColumns(#"Changed Type3",{{"Organization/Company:", Text.Trim, type text}})
```

```
= Table.TransformColumns(#"Trimmed Text",{{"Organization/Company:", Text.Trim, type text}, {"County:", Text.Trim, type text}, {"Supplies Food For:", Text.Trim, type text}, {"Dietary Accommodations:", Text.Trim, type text}, {"Contact and Additional Information:", Text.Trim, type text}})
```

**R Script**

*This R Script was used to perform the data analysis and plot the bar charts. Download .txt file: https://690f3218-4e9b-4f0c-8da5-9d12749e6b72.usrfiles.com/ugd/690f32_dd08d1c066534b928c4bdc0f38e7e00c.txt*

```
# Load necessary libraries
install.packages("tidyverse")
install.packages("ggplot2")
install.packages("janitor")
library(tidyverse)
library(ggplot2)
library(janitor)

# Load datasets and build dataframes
compressed_data <- read_csv("PowerQuery_Data_v2.csv")
long_form_data <- read_csv("PowerQuery_Table_v2.csv")

# View a high level summary of the dataframes
colnames(compressed_data)
head(compressed_data)
colnames(long_form_data)
head(long_form_data)

# Count of unique entries in each column. Result: there are 51 unique organizations, but there are 54 observations, meaning we have duplicate entries
sapply(long_form_data, function(x) n_distinct(x))

# Clean up the column names to make it easier for R to read them
compressed_data_clean <- compressed_data %>%
  clean_names()
long_form_data_clean <- long_form_data %>%
  clean_names

# Review the new column names
colnames(compressed_data_clean)
colnames(long_form_data_clean)

# Create a dataframe that shows a count organizations by Supplier Type
```

```
suppliertype_count_unique <- long_form_data_clean %>%
  group_by(`supplier_type`) %>%
  summarise(Num_Organizations = n_distinct(`organization_company`)) %>%
  arrange(desc(Num_Organizations))

# View the top results
print(suppliertype_count_unique)

# Plot a bar chart showing count of organizations by Supplier Type
ggplot(suppliertype_count_unique, aes(x = reorder(`supplier_type`,
-Num_Organizations), y = Num_Organizations)) +
  geom_col(fill = "#006400") +
  geom_text(aes(label = Num_Organizations), vjust = -0.3, color = "black") +
  labs(title = "Number of Suppliers by Type",
       x = "Supplier Type",
       y = "Number of Suppliers") +
  theme(
    axis.text = element_text(size = 9),
    axis.title = element_text(size = 16),
    plot.title = element_text(size = 18, face = "bold")
  ) +
  coord_cartesian(ylim = c(0, 25)
  )

# Create a dataframe that shows count of suppliers in each county
county_counts <- long_form_data_clean %>%
  distinct(county, organization_company) %>%
  group_by(county) %>%
  summarise(Num_Organizations = n()) %>%
  ungroup() %>%
  arrange(desc(Num_Organizations))

# View the top 5 counties with the highest number of suppliers
print(n=5, county_counts)

# View the bottom 5 counties with the lowest number of suppliers
tail(county_counts, 5)

# To plot bar charts showing the top 5 and bottom 5 counties, first create
the dataframes.
top5_counties <- county_counts %>%
  slice_head(n = 5)

bottom5_counties <- county_counts %>%
  slice_tail(n = 5)
```

```
# Now, plot the bar chart for the top 5 counties
ggplot(top5_counties, aes(x = reorder(county, -Num_Organizations), y =
Num_Organizations)) +
  geom_col(fill = "#004d00") +
  geom_text(aes(label = Num_Organizations), vjust = -0.3, color = "black") +
  labs(title = "Top 5 Counties by Number of Suppliers",
       x = "County",
       y = "Number of Suppliers") +
  theme(
    axis.text = element_text(size = 14),
    axis.title = element_text(size = 16),
    plot.title = element_text(size = 18, face = "bold")
    ) +
  coord_cartesian(ylim = c(0, 30)
                  )


# And plot the bar chart for the bottom 5 counties
ggplot(bottom5_counties, aes(x = reorder(county, -Num_Organizations), y =
Num_Organizations)) +
  geom_col(fill = "#004d00") +
  geom_text(aes(label = Num_Organizations), vjust = -0.3, color = "black") +
  labs(title = "Lowest 5 Counties by Number of Suppliers",
       x = "County",
       y = "Number of Suppliers") +
  theme(
    axis.text = element_text(size = 14),
    axis.title = element_text(size = 16),
    plot.title = element_text(size = 18, face = "bold")
  ) +
  coord_cartesian(ylim = c(0, 30)
  )
```