

# Growing Resilience

Unlocking the Potential of Farm to School to  
Strengthen the Economy, Support New York Farms, and  
Improve Student Health in the Face of New Challenges

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## Methods

### Table of Contents

- 1 Designing the Survey
- 2 Survey Fielding
- 2 Verifying Sample Data Generalizeability
- 3 Survey Data Cleaning
- 4 Additional Data Sources
- 6 Determining Statistical Relationships Impacting Access to Local Food
- 8 Determining How Including Local Breakfast Purchases Impacts Program Eligibility
- 9 Calculating the Economic Impact of New York Grown Food Purchases
- 14 Identifying Barriers to Buying New York Grown Food
- 14 Limitations and Potential Sources of Error



## About this Research

American Farmland Trust conducted research during the summer of 2020 to build on previous research published in the Growing Opportunity for Farm to School in New York report. This new research sought to clarify the remaining barriers schools face purchasing New York food products and reaching 30% to qualify for the New York Farm to School Incentive, as well as the impact COVID-19 may have on farm to school in New York. This section details the methods we used to analyze the data we collected and arrive at the findings detailed in the report, accessible at [www.farmland.org/growingresilience](http://www.farmland.org/growingresilience).

## Designing the Survey

Survey questions were designed by American Farmland Trust (AFT) staff and evaluated by the Farm to Institution New York State leadership team, the New York Grown Food for New York Kids Coalition, the New York School Nutrition Association, New York Department for Agriculture and Markets, and the New York State Education Department. Thanks to the New York State Health Foundation, the survey, data collection, and data analysis were also supported by a program evaluation team at New York University Langone School of Medicine. Language and terminology used in the survey reflected vocabulary common to existing New York farm to school materials developed by federal and state agencies and were in-line with the policy initiative. The survey tool can be accessed [here](#).

The introductory section of the survey asks general questions about purchases of New York Food Products, as defined by New York State Education Department as food items that are grown, harvested, or produced in New York State (NYS); or a food item processed inside or outside NYS comprising over 51% agricultural raw materials grown, harvested, or produced in NYS, by weight or volume. Respondents were then sorted into one of four possible tracks based on their answers to Q8, Q9, and/or Q14. The intention behind this survey design was to streamline the survey-taking process for respondents and provide more nuanced data.

The tracks were as follows:

- Track 1: I intend to apply for the incentive program after Program Year Two (in August 2020).
- Track 2: I am working towards applying for the incentive program but am not ready to apply after Program Year Two.
- Track 3: I am not currently working towards applying for the incentive program.
- Track 4: I do not purchase any New York Food Products.

Tracks 1 respondents were asked to provide more precise financial estimates detailing spending during breakfast and lunch than Track 2 and 3 respondents. All Track 1-3 respondents were asked whether they served New York food products, or NYFPs, at breakfast or other meals and which products they served. Track 2-4 respondents were asked to estimate the time it would take to reach 30% under an alternate scenario where breakfast purchases were included in the accounting towards reaching 30%. Track 2 respondents were specifically asked about the impact of COVID-19 on their plans to apply for the incentive program. Track 4 respondents were asked why they did not purchase New York food products and if they were interested in working with a Farm to School coordinator. Upon concluding their specific track, respondents were all reintegrated in the concluding section, where they completed questions about procurement methods and barriers, and finally—the impact COVID-19 may have on the future of Farm to School at their School Food Authority (SFA).

## Survey Fielding

The survey was conducted from July 6, 2020 to August 7, 2020 to collect information about purchases of New York food products during the 2019-2020 school year. AFT obtained a list of all School Food Authorities (SFAs) and contact information for food service directors and school business officials for each from the New York State Department of Education (NYSED). After removing duplicate and noneligible entries, the final data set consisted of 987 unique public, private, and charter K-12 New York School Food Authorities. From this target population, a random sample of 300 was created that was statistically representative of New York state's total school and student population by size and county. The New York City Public School system was excluded from the sampling frame and surveyed separately due to its unique size, purchasing power, number of students, and overall importance. Albany, Buffalo, Rochester, and Syracuse Public School systems were also surveyed separately.

The survey was conducted online through SurveyMonkey and remained open for five weeks. Food service directors and business officials were invited to complete the survey via emails sent from NYSED. American Farmland Trust sent follow-up outreach emails and circulated letters of endorsement from the New York State Department of Agriculture and Markets and the New York School Nutrition Association. AFT telephoned all non-respondents in the sample in the final weeks to increase response rate and encourage participation.

## Verifying Sample Data Generalizeability

The final dataset from the random sample consisted of 163 responses, or a 54% response rate. There were no respondents from Cortland, Hamilton, Lewis, Richmond, Schuyler, or Steuben counties. Within the respondent sample, 86% of counties were represented within one percentage point of the share they represent within the total SFA population (Figure 1, Table 1).

Figure 1 - County Representation of Sample Relative to Population

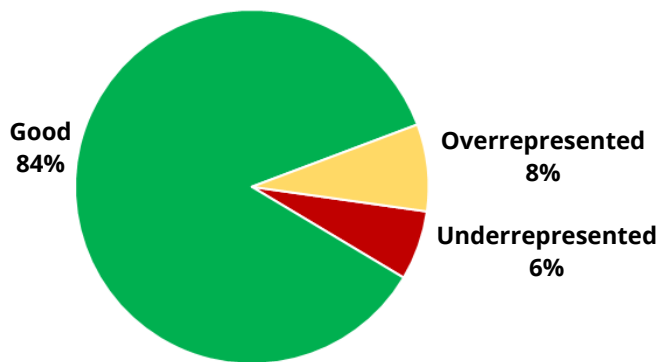
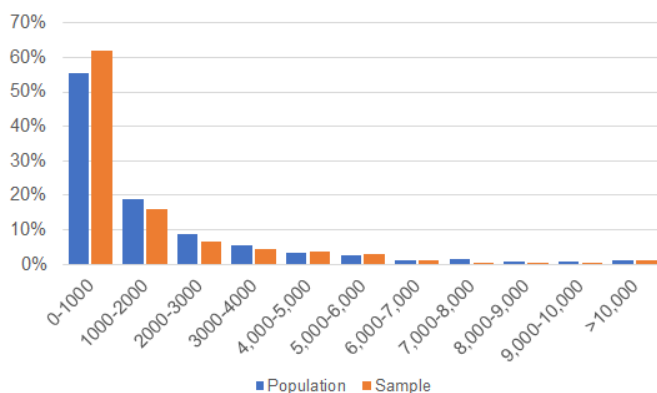


Table 1 - Outlier Counties

Underrepresented	Overrepresented
Kings (5.77%)	Albany (1.71%)
Nassau (4.65%)	Fulton (1.21%)
Rockland (1.01%)	Herkimer (1.21%)
Steuben (1.31%)	Livingston (1.01%)
	Oneida (1.21%)

Figure 2 - Program Enrollment Distribution



A single sample T-test found no statistically significant difference between the average lunch program enrollment count of the respondent sample compared to the population of 987 school food authorities (Figure 2).

## Survey Data Cleaning

After the survey closed, we eliminated 37 responses from the dataset because their survey was initiated but did not contain answers. Of seven anonymous responses, we eliminated four that could not be geographically verified. If food service directors completed more than one survey response, we included the response submitted at the later date and eliminated the earlier response.

We reviewed and coded responses to “Other: Please Specify” answer choices into the most suitable existing categories, marked them as supporting commentary that did not count towards tallies, or coded them into a new column if two or more respondents gave the same answer. We reviewed and coded open-ended responses into categories based on common themes found within responses. Open-ended response tallies are non-exclusive, i.e., responses could be coded into multiple categories.

Responses to common questions across the different tracks were combined to generate total response tallies for these questions for the full respondent sample.

We calculated the following additional categories:

- Increase in purchases of different New York food products by category
- Average number of New York food products purchases by category
- Changes in time estimates for achieving 30% under the current program requirements versus if New York food products purchases served at breakfast counted towards achieving the 30% threshold.

We cleaned and completed the financial information to create a uniform data set. Numerical responses were eliminated if it was unclear what the respondent meant (example: Total Food Costs = 1.8) or if we had clear reason to believe the respondent misinterpreted a question because the number provided was a large outlier compared to other respondent answers. For Track 2 and 3 respondents, we multiplied the total food costs and spending percentages respondents provided to calculate dollar amounts for amount spent on lunch and breakfast, New York food products served at lunch and breakfast, and value of milk as a portion of breakfast spending on New York food products. For Track 1 respondents, we calculated spending percentages using dollar values provided. If respondents provided a weekly spending rate, (example: "I spend \$1,200 per week), this number was multiplied by 38 weeks, the length of the 2019-2020 school year.

Figure 3 - Percentage of Students Receiving Free and Reduced Lunch

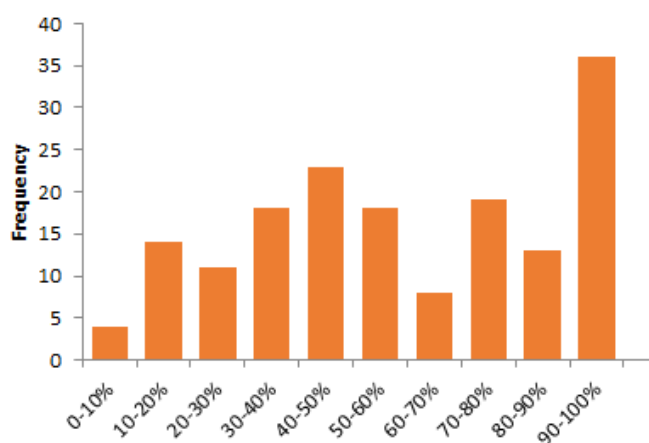
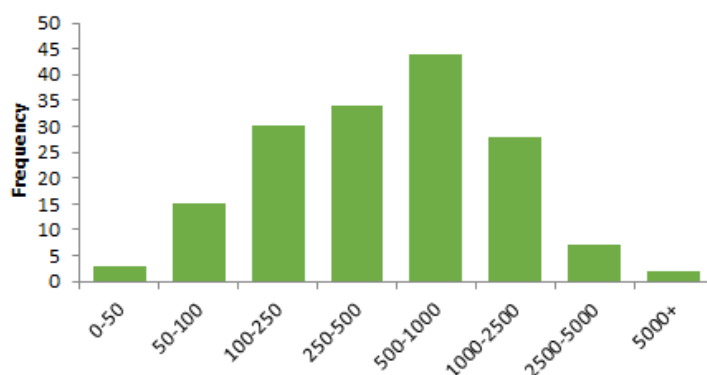


Figure 4 - Avg Lunch ADP, September-March

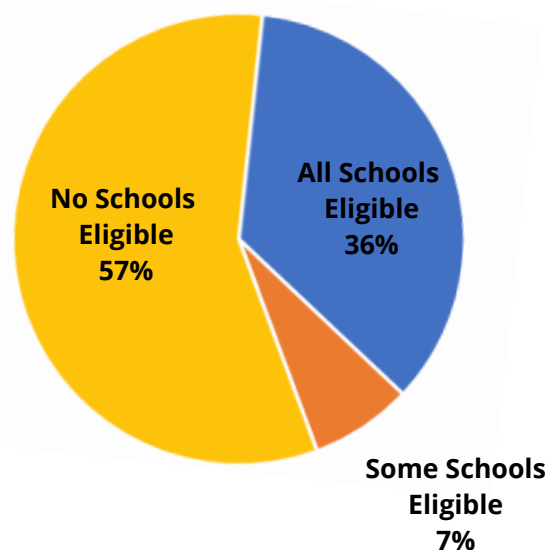


## Additional Data Sources

In addition to the survey responses, we obtained data from several other sources for use in analyses. We obtained data for school food authority program enrollment count, monthly school food authority average daily participation at lunch, percentage of students receiving free or reduced lunch, and eligibility for the Community Eligibility Program (CEP) from NYSED staff (Figure 3 and Figure 4).

CEP eligibility is determined for each individual school within a school food authority. Therefore, CEP eligibility was categorized as Yes, No, or Partial depending on whether all, none, or some schools within the school food authority had been deemed CEP eligible (Figure 5).

Figure 5 - CEP Eligibility





We downloaded 2019 demographic data by school district, which align almost exactly with the operational boundaries of school food authorities, from the NYSED Information and Reporting Services [webpage](#). There was no demographic data available for BOCES and those respondents were excluded from analyses involving student racial demographics.

The geographic designations were determined according to the county in which the school food authority was located and whether the school food authority was in an urban center (Figure 6, Table 2). Any school food authority not located in an urban center was designated as Non-Urban, regardless of whether it was located in a town, suburban, or rural area.

Figure 6 - Upstate and Downstate New York

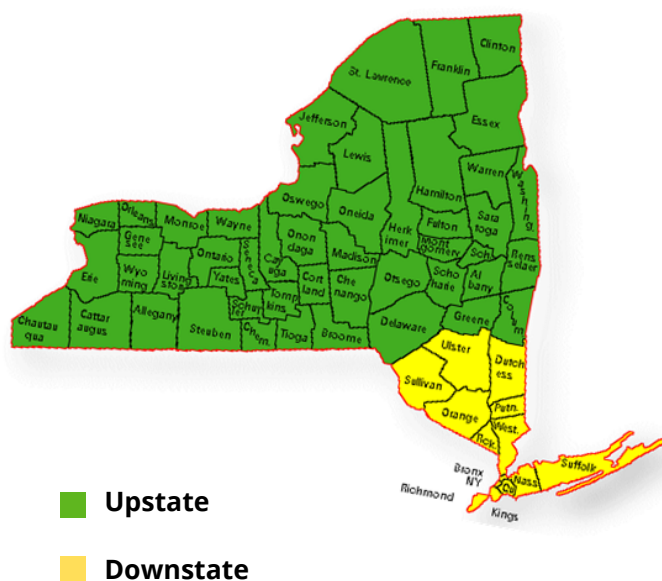


Table 2 - Regions of New York State

Upstate New York	
Region	Counties
Western New York	Niagara, Erie, Chautauqua, Cattaraugus, Allegany
Finger Lakes	Orleans, Genesee, Wyoming, Monroe, Livingston, Wayne, Ontario, Yates, Seneca
Southern Tier	Steuben, Schuyler, Chemung, Tompkins, Tioga, Chenango, Broome, Delaware
Central New York	Cortland, Cayuga, Onondaga, Oswego, Madison
North Country	St. Lawrence, Lewis, Jefferson, Hamilton, Essex, Clinton, Franklin
Mohawk Valley	Oneida, Herkimer, Fulton, Montgomery, Otsego, Schoharie
Capital District	Albany, Columbia, Greene, Warren, Washington, Saratoga, Schenectady, Rensselaer
Downstate New York	
Hudson Valley	Sullivan, Ulster, Dutchess, Orange, Putnam, Rockland, Westchester
New York City	New York, Bronx, Queens, Kings, Richmond
Long Island	Nassau, Suffolk

## Determining Statistical Relationships Impacting Access to Local Food

We conducted statistical analyses in Excel and used Chi Square, single factor ANOVA, and T tests to determine whether there were statistically significant relationships between the variables listed on this page and how respondents answered the following questions:

Question 8: Do you intentionally purchase New York Food Products to serve to your students? (N=163)

- Yes
- No, but we incidentally purchase New York Food Products
- No, we do not purchase **any** New York Food Products
- I'm not sure

Question 13 and 57 (Identical Text): Looking forward, I anticipate my spending in dollars on New York Food Products will: (N=154)

- Increase
- Decrease
- Stay the Same

### Variables Used for Statistical Analysis

Program Enrollment Count  
% Students Receiving Free/Reduced Lunch  
CEP Eligibility  
% Black Students  
% Hispanic Students  
% Black or Hispanic Students  
% White Students  
Urban/NonUrban  
Upstate/Downstate

Question 29, 41, 60 (Identical Text): With the right support, I feel optimistic that my SFA will achieve 30% spending of our lunch costs on New York Food Products in \_\_\_ years (please estimate to the best of your ability): (N=113)

- 1 year (by the end of the 2021 school year)
- 2 years (by the end of the 2022 school year)
- 3 years
- 4 years
- 5 years
- 6+ years
- I don't think we will ever achieve 30%

Results were considered statistically significant when the associated p-values were less than 0.05. Results were considered trends when the p-values exceeded 0.05 but were less than 0.1. Results are organized by question. It is important to keep in mind that there are notable differences in the racial composition of school food authorities and their geographic location within New York state (Table 3).

Table 3 - Student Race vs SFA Geography

	Urban Upstate	Upstate	Urban Downstate	Downstate	P Value
Avg % Black Students	22.4%	2.3%	9.5%	8.0%	<0.001
Avg % Hispanic Students	11.9%	4.5%	20.1%	19.9%	<0.001
Avg % Black or Hispanic Students	34.4%	6.5%	29.6%	27.9%	<0.001
Avg % White Students	56.4%	88.1%	62.7%	65.9%	<0.001

*Question 8: Do you intentionally purchase New York Food Products (NYFP) to serve to your students? (N=163)*

Single factor ANOVA and Chi-square tests determined any statistically significant relationships. If respondents answered “I’m not sure” to Q8, their subsequent response to Q9 was used to recategorize their initial “I’m not sure” response as “Incidental” or “No.” After collecting our initial sample data, we reached out to food service directors from Albany, Buffalo, Syracuse, and Rochester city school districts, who were not a part of the original random sample. We asked them to answer this question so that we could more confidently perform statistical analyses determining access to local food in urban schools. Their responses, as well as New York City Public School system’s response, were included in the analyses for this question.

*Table 4 - Intentional Purchases of New York Food Products*

	<b>Yes</b>	<b>Incidental</b>	<b>No</b>	<b>P Value</b>
Avg % Black Students	6.0%	6.7%	14.9%	0.333
Avg % Hispanic Students	9.5%	10.6%	20.4%	0.203
Avg % Black or Hispanic Students	15.5%	17.3%	35.3%	0.144
Avg % White Students	79.1%	58.5%	33.8%	<0.001
Avg % Free/Reduced Lunch	57.5%	60.8%	80.1%	0.096
Program Enrollment Count	1,577	1,762	532	0.726
CEP Eligibility	N/A	N/A	N/A	0.182
Urban/NonUrban	N/A	N/A	N/A	0.088
Upstate/Downstate	N/A	N/A	N/A	0.002

*Question 13 and 57 (Identical Text across Introduction, Track 4): Looking forward, I anticipate my spending in dollars on New York Food Products (NYFP) will: (N=154)*

Single factor ANOVA and Chi-square tests did not reveal any statistically significant findings.

*Table 5 - New York Food Product Purchase Expectations*

	<b>Increase</b>	<b>Decrease</b>	<b>Stay the Same</b>	<b>P Value</b>
Avg % Black Students	7.1%	6.1%	6.7%	0.971
Avg % Hispanic Students	8.7%	13.7%	12.7%	0.345
Avg % Black or Hispanic Students	15.9%	19.9%	19.4%	0.695
Avg % White Students	90.5%	69.1%	74.4%	0.468
Avg % Free/Reduced Lunch	58.8%	57.0%	61.3%	0.849
Program Enrollment Count	1,414	1,249	1,783	0.525
CEP Eligibility	N/A	N/A	N/A	0.278
Urban/NonUrban	N/A	N/A	N/A	0.946
Upstate/Downstate	N/A	N/A	N/A	0.938



Question 29, 41, 60 (Identical Text across Tracks 1-3): With the right support, I feel optimistic that my SFA will achieve 30% spending of our lunch costs on New York Food Products in \_\_\_ years (please estimate to the best of your ability): (N=113)

Responses were grouped into the categories “1-5 years”, which included respondents who chose those respective time estimates, and “Never,” which included respondents who chose 6+ years or Never. Two-sample t-tests assuming equal variance determined any statistically significant relationships.

Table 6 - Time Estimates to Achieve 30%

	1 - 5 Years	Never	P Value
Avg % Black Students	4.9%	5.6%	0.69
Avg % Hispanic Students	8.8%	14.2%	0.10
Avg % Black or Hispanic Students	13.6%	19.7%	0.18
Avg % White Students	79.0%	74.3%	0.35
Avg % Free/Reduced Lunch	54.5%	58.7%	0.52
Program Enrollment Count	1,736	1,540	0.67
CEP Eligibility	N/A	N/A	0.74
Urban/NonUrban	N/A	N/A	0.47
Upstate/Downstate	N/A	N/A	0.42

## Determining How Including Local Breakfast Purchases Impacts Program Eligibility

We had an initial pool of 111 responses containing financial data from Tracks 1-3 respondents to determine how many school food authorities would become automatically eligible if the structure of the New York Farm to School Incentive were changed according to the two scenarios explained in the report. Track 4 respondents were not included in this analysis because they do not purchase any New York food products (NYFP). We eliminated respondents if:

- They did not provide any financial information on their NYFP purchases
- Their responses contained 2 or more outliers
- The percent of total food costs spend on lunch and breakfast was less than 50%
- The percent of total lunch food costs spent on NYFP exceeded 35%

After eliminated responses according to these criteria, we had 75 usable responses. We then calculated how many respondents would automatically qualify for the 30% program if:

- New York produced fluid milk served at breakfast were counted in addition to NYFP served at lunch
- All NYFP served at breakfast were counted in addition to those served at lunch
- The threshold calculation was changed from 30% of Total Lunch Food Costs to 30% of Total Lunch and Breakfast Costs.

We calculated the following:

- Dollar value of NYFP served at lunch + New York produced fluid milk served at breakfast
  - Difference between above dollar value as a % of Total Lunch Food Costs and the reported current % of Total Lunch Food Costs spent on NYFP served at lunch
- Dollar value of all NYFP served at lunch and breakfast
  - Difference between above dollar value as a % of Total Lunch Food Costs and the reported current % of Total Lunch Food Costs spent on NYFP served at lunch
  - Difference between above dollar value as a % of Total Lunch + Breakfast Food Costs and the reported current % of Total Lunch Food Costs spent on NYFP served at lunch

**It should be noted that this is a more simplified method of determining automatic eligibility for the New York Farm to School Incentive than the official calculation method.** The survey collected and used approximate spending information, whereas the official calculation method also takes into account meal reimbursements received from both the federal and state governments. The official NYSED program eligibility calculator tool can be found [here](#).

## Calculating the Economic Impact of New York Grown Food Purchases

This year we updated our previous estimate of the potential economic impact of New York farm to school purchasing for items served at lunch and created a new estimate for the potential economic impact of New York food products items served at breakfast.

### Lunch

We re-applied the 2020 Growing Opportunity report's method to calculate the potential economic contribution of schools that purchase New York food products for lunch and anticipate meeting the 30% threshold within the next five years. We calculated the number of students that would receive increased access to New York grown food each year calculated using this formula for each year from program inception to 2025:

$$\frac{\text{ADP of surveyed SFAs that anticipate meeting 30\% each year}}{\text{ADP for Total Survey Sample}} = \frac{X \text{ Number of Students Affected}}{\text{Statewide Total ADP}}$$

Responses to Q29, 41, or 60 (Identical Text across Tracks 1-3) were used to calculate total average daily participation (ADP) at lunch for Program Year 3, 4, 5, 6, and 7 (through 2025). Track 4 respondents were not included in this analysis because they do not purchase New York food products. Track 1 respondents who answered Q14 with "I'm not sure yet [whether I will apply in program year two], but that's our goal," were added to Program Year 3 on the assumption that they were likely close to achieving 30% if they were considering applying in Program Year 2.

Using official data from NYSED for September 2019 – March 2020, we calculated the weighted average daily participation at lunch for each respondent. The total average daily participation for the survey sample was 750,981 lunches served daily, which includes New York City Public Schools. We used a statewide average daily participation at lunch of 1.7 million students.

Table 7 - Students Impacted Per Year

Table 7 indicates the number of new students and expected cumulative number of students impacted in each program year. Program Year 6 is divided to reflect the number of students expected using the formula and the additional contribution generated by New York City Public Schools. By the end of Program Year 7, 53% of students across New York state would have increased access to health, fresh New York products during school lunch.

Program Year	New Students Impacted	Cumulative Students Impacted
1 (2018-2019)	34,730	34,730
2 (2019-2020)	72,334	107,064
3 (2020-2021)	50,309	157,373
4 (2021-2022)	64,996	222,339
5 (2022-2023)	40,806	263,144
6 (2023-2024)	11,884	275,029
NYC	618,789	893,818
7 (2024-2025)	13,763	<b>907,581</b>

We used official NYSED data on how much qualifying school food authorities reported spending on New York food products as the economic impact of the New York Farm to School Incentive in Program Years One and Two. We calculated the economic contributions of the incentive in subsequent program years using the following equation:

$$\begin{aligned}
 & \text{Cumulative Students Impacted Statewide in Program Year X} \\
 & \times \$1.65, \text{ the average food costs for school lunch in New York State during the 2019-20 school year} \\
 & \times 0.30 \text{ of lunch costs spent on New York food products} \\
 & \times 180 \text{ days in the standard academic year} \\
 & = \text{Economic Impact in Program Year X}
 \end{aligned}$$

To determine the cost to the state, we used a similar equation:

$$\begin{aligned}
 & \text{Cumulative Students Impacted Statewide in Program Year X} \\
 & \times \$0.19 \text{ reimbursement per lunch meal} \\
 & \times 180 \text{ days in the standard academic year} \\
 & = \text{Cost to the State in Program Year X}
 \end{aligned}$$

Table 8 shows the expected economic impact and costs for each program year. The Comprehensive Cost column takes into account additional state expenditures to support the Farm to School Coordinator Grants program, reflecting a hoped-for level of growth in this program to provide full support.

Dividing yearly spending by yearly costs to the state returned an average ratio of \$2.46 for this program, meaning that for every \$1.00 spent by the state to operate these programs, school food authorities spend almost \$2.50 on New York food products from farms and food businesses. Using last year's multiplier of 1.43, we found a potential total economic impact of \$358,046,804 and an overall return on investment of \$3.50 for every taxpayer dollar spent. This is likely a conservative estimate because this static model assumes schools reach but do not surpass spending 30% of lunch costs on New York food products.

Table 8- Expected Economic Impact Each Year

Program Year	Cumulative Students	Spending in Program Year X	Cost to State in Program Year X	Farm to School Coordinator Grants	Comprehensive Cost
1	34,730	2,928,580	1,187,766	1,500,000	2,687,766
2	107,064	5,165,688	3,661,589	1,500,000	5,161,589
3	157,373	14,021,898	5,382,143	1,500,000	6,882,143
4	222,339	19,810,377	7,603,983	1,500,000	9,103,983
5	263,144	23,446,152	8,999,533	2,000,000	10,999,533
6	275,029	24,505,057	9,405,982	3,000,000	33,568,565
NYC	893,818	79,639,157	30,568,565		
7	907,581	80,865,470	31,039,271	3,000,000	34,039,271
Total	<b>907,581</b>	<b>250,382,381</b>	<b>97,848,832</b>	<b>14,000,000</b>	<b>102,442,851</b>

Last year, the seven school food authorities that qualified for the 30% New York Farm to School Incentive spent, on average, 32% of lunch costs on New York food products. This year the average spending among qualifying school food authorities increased to 39%. All seven school food authorities that qualified last year re-qualified this year, supporting our model's assumption that qualifying schools will maintain their status. It is noteworthy that six of the seven requalifying school food authorities increased the percentage of lunch costs spent on New York food products by an average of 4.52%.

### Breakfast

We developed a new model to estimate the potential economic impact of school spending on New York food products served at breakfast, should breakfast meals be incorporated into the program. The following explains how we arrived at the economic impact if a majority of school food authorities spend at least 30% of their total breakfast costs on New York food products. We made our model sensitive to the distribution of school population sizes across the state because we used the number of students eating meals as a proxy for spending, and consequently economic impact.

Using official data from NYSED for September 2019 – March 2020, we calculated the average lunch ADP for each of the 987 school food authorities in New York state. We then multiplied each school food authority's average lunch ADP by 0.54, the average ratio we found in our own sample data of breakfast to lunch ADP, to estimate each school food authority's breakfast ADP. Table 9 shows the statewide distribution of school food authorities according to their calculated average breakfast ADP.

We calculated an expected average breakfast spend per day for each group by multiplying their average breakfast ADP by \$0.98, the average food cost spent on breakfast meals during the 2019-2020 school year according to NYSED. This number was then multiplied by 30% to determine the average daily amount each group would spend on New York food products served at breakfast.

Table 9- Estimated Breakfast ADP for NY SFAs

Group	Breakfast ADP Range	Number of SFAs	% of Total	Average Breakfast ADP
1	0-50	80	8%	32
2	50-100	105	11%	74
3	100-250	254	26%	172
4	250-500	266	27%	358
5	500-1,000	154	16%	718
6	1,000-2,500	98	10%	1,487
7	2,500-5,000	21	2%	3,294
8	5,000 +	7	1%	8,651

Table 10 – Distribution of SFAs by % Spent of Breakfast Costs Spent on NYFP

% Total Breakfast Costs Spent on NYFP	Percent
≥ 50%	6%
40-50%	6%
30-40%	15%
20-30%	40%
10-20%	19%
0-10%	13%

Looking at our respondent sample, we found that 95% of school food authorities serve school breakfast and 78% of school food authorities serve at least one New York food product during school breakfast. We therefore multiplied the number of school food authorities in each group by 0.95 and 0.78, respectively, to determine how many school food authorities served New York food products at breakfast.

We used the financial data from 85 respondents who provided information on their spending to determine a rough distribution of school food authorities according to their reported spending level on New York food products served at breakfast (Table 10). We assigned the average spending level, 0.24, to the 17 respondents who reported serving New York food products at breakfast but did not provide a percentage.

For each group, we divided the number of school food authorities serving New York food products at breakfast according to the distribution in Table 10. The number of school food authorities within each of the bottom three ranges was further multiplied by 0.75 to reflect that not all school food authorities will achieve 30%. Seventy-five percent was chosen to reflect the number of SFAs that felt confident they could reach 30% spending on New York food products for lunch by 2025.

#### Example - Group 1

Average Breakfast ADP: **32**

Average Breakfast Spend Per Day:  
 $32 \times \$0.98 = \mathbf{\$31.05}$

Average Breakfast NYFP Spend Per Day:  
 $\$31.05 \times 0.3 = \mathbf{\$9.31}$

Number of SFAs that Serve Breakfast:  
 $80 \times 0.95 = \mathbf{76}$

Number of SFAs that Serve NYFPs at Breakfast:  
 $76 \times 0.78 = \mathbf{59}$

Number of SFAs that Do Not Serve NYFPs at Breakfast:  
 $76 \times 0.22 = \mathbf{17}$

Table 11- Group 1 Example

<b>% Total Breakfast Costs Spent on NYFP</b>	<b>%</b>	<b># of SFAs</b>	<b>Avg Daily Spend on NYFP</b>	<b>Avg Increase Needed in Daily Spend</b>	<b>Total Spending</b>
≥ 50%	6%	4	$0.5 \times \$31.05 = \$15.52$	-	$\$15.52 \times 4 = \$54.78$
40-50%	6%	4	$0.4 \times \$31.05 = \$12.42$	-	$\$12.42 \times 4 = \$43.82$
30-40%	15%	9	$0.3 \times \$31.05 = \$9.31$	-	$\$9.31 \times 9 = \$85.45$
20-30%	40%	$24 \times 0.75 = 18$	$0.2 \times \$31.05 = \$6.21$	$\$9.31 - \$6.21 = \$3.10$	$\$9.31 \times 18 = \$167.72$
10-20%	19%	$11 \times 0.75 = 8$	$0.01 \times \$31.05 = \$3.10$	$\$9.31 - \$3.10 = \$6.21$	$\$9.31 \times 8 = \$78.88$
0-10%	13%	$8 \times 0.75 = 6$	$0.01 \times \$31.05 = \$0.31$	$\$9.31 - \$0.31 = \$9.00$	$\$9.31 \times 6 = \$54.23$
0%	-	$17 \times 0.75 = 13$		\$9.31	$\$9.31 \times 13 = \$116.80$

We calculated an Average Daily Spend on New York food products by multiplying the lower end of each range (0.5, 0.4, 0.3, 0.2, and 0.01 respectively) by the group Average Breakfast Spending per Day to provide a conservative estimate of spending on New York food products served at breakfast. We then took the difference between Average Daily Spend on New York food products and the Average Breakfast NYFP Spend Per Day for the group for the lower three ranges (spending <30%) to determine by the required spending increase for those school food authorities.

For the upper two ranges, we calculated total spending on New York food products served at breakfast by multiplying their Average Daily Spend on New York food products by the number of SFAs in each range. For the remaining ranges, we calculated total spending by multiplying the number of SFAs in each range by the group-level average daily spending on New York food products served at breakfast. The total new spending for each group is the sum of each range's predicted spending contribution.

We found the total spending increase in the farm economy by adding the total spending for each group and multiplying the sum by 180 days in the school year. We calculated the statewide economic impact by using an economic multiplier of 1.43. If 75% of schools not currently spending 30% of breakfast costs on New York food products achieved that level of spending, they would generate \$13,051,128.90 in new spending for the farm economy and have an economic impact of \$18,663,114.33. Assuming schools already exceeding the 30% of breakfast costs threshold maintained their existing spending, school food authorities across New York State would spend a total of \$22,381,281 annually and have an economic impact of \$32,005,232. This estimate excludes the impact of spending by New York City Public Schools.

New York City Public Schools currently reports spending 4% of total breakfast costs on New York food products. If they maintained this current level of spending, school food authorities statewide would spend \$29,581,281 annually and have an economic impact of \$42,301,232. If New York City Public Schools increased the percent of total breakfast costs spent on New York food products to 30%, they alone would spend \$55,860,00.00 per year on New York food products – an increase of \$48,412,000 – and raise the total impact on the farm economy to \$78,241,281.



Using the same economic multiplier, this would have an overall statewide economic impact of \$111,885,031.99. These economic impact projections suggest the significant potential economic impact of incentivizing school breakfast spending on New York food.

These numbers represent an annual level of spending that would be achieved when all schools that might reach 30% breakfast spending on New York food products do so. They are not cumulative, nor do they reflect increases in spending each year. The costs of this type of program were not calculated as there is no current reimbursement incentive structure in place for breakfast.

## Identifying Barriers to Buying New York Grown Food

This research was designed in part to uncover the top barriers food service directors face when looking to purchase New York grown food for their schools. Respondents identified any barriers that pertained to them from a list of 43 challenges categorized according to Procurement Limitations, Regulatory Challenges, Supply Chain Limitations, Internal School Food Authority Limitations, and Challenges Buying Directly from New York Farms.

Respondents could also write in a barrier if it was not included in the provided list. Respondents then rated the difficulty each barrier posed to achieving 30% spending on New York food products from (1) This will not keep my SFA from reaching 30% to (5) This will definitely keep my SFA from reaching 30%. Barriers rated 1 were given a multiplier of (x1), 2 (x2), 3 (x3), 4 (x4), 5 (x5). The cumulative score was divided by the total number of respondents who identified that barrier minus the respondents who said Not Applicable. The final list was ranked first by the number of respondents, then by the weighted score.

## Limitations and Potential Sources of Error

The timing of this research and the COVID-19 pandemic may have resulted in a lower than target response rate. We fielded the survey in July, when many food service directors are still reconciling year end budgets and this may have impacted their ability to accurately estimate financial information. Some school food authorities within the sample could not be reached because food service directors were on vacation or had retired and their replacements were still familiarizing themselves with operations and could not answer questions. Many food service directors were preoccupied running emergency summer meal operations to provide for children impacted by the pandemic and determining updated plans and protocols for meal service during the upcoming school year.

Responses to the survey were voluntary and not incentivized; selection bias may be present in some data. Additionally, not all respondents provided responses to all survey questions. Results presented in this report are therefore question-specific and the sample size is indicated alongside all data findings.

This survey collected a significant amount of self-reported numerical data, which is inherently prone to error. Respondents were asked to estimate dollar values and percentages to the best of their ability. It is possible they under or over-estimated numbers or misunderstood what was being asked. While data used in financial calculations was carefully assessed and sorted according to perceived reliability, any error within the original data would have carried over into the calculated data.