The Nelson A. Rockefeller Center at Dartmouth College
The Center for Public Policy and the Social Sciences

The Class of 1964 Policy Research Shop

LOCAL FOOD IN VERMONT SCHOOLS

Barriers, Impacts, and Solutions for Local Food Acquisition

Presented to the Vermont Senate Agriculture Committee

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Prepared By:

Arthur Raines
Alex Sasse
Sachin Shiva

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Contact:
Nelson A. Rockefeller Center, 6082 Rockefeller Hall, Dartmouth College, Hanover, NH 03755
http://rockefeller.dartmouth.edu/shop/ • Email: Ronald.G.Shaiko@Dartmouth.edu

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EXECUTIVE SUMMARY

By 2025, the State of Vermont intends that 50 percent of the food schools serve be locally produced.[1] As of 2014, 5.6 percent of the food schools serve is locally produced.[2] The goal of this study is to determine how Vermont might increase the amount of local food in schools and evaluate the economic impact of such an increase. Our analysis focuses on the most pertinent barriers schools face when trying to increase local food purchases and introduces solutions to overcome these barriers. We then present our analysis of the economic impact of increasing local food purchases. We summarize the key insights of a joint report published in 2016 by the Economic Value Working Team of Vermont Farm to School, the Center for Rural Studies (CRS), and the Department of Community Development and Applied Economics (CDAE) at the University of Vermont (UVM). This report found that each additional dollar spent on local food adds 60 cents to the local economy.[3] Lastly, our report analyzes current Senate Bill S.273 and provides detailed concerns and recommendations for the bill.

1. BACKGROUND

To provide context for our research and assess the current landscape of local food initiatives in Vermont, we define relevant terms, briefly discuss the history of Farm to School programming in Vermont, and examine current Farm to School funding mechanisms.

1.1 Definition of Terms

Farm to School (FTS): Vermont State Statute (Act 63) defines Farm to School as an integrated food, farm, and nutrition education program that utilizes local resources to provide students with locally produced foods as well as farm and nutrition learning opportunities. The goal is to help students develop healthy eating habits and improve the incomes of farmers and their direct access to markets.[4] In this report, we focus on local food purchases rather than other types of Farm to School programming.

Local Food: For the purposes of this report, local food is defined as food grown or produced in Vermont or within 30 miles of its state borders. We chose this definition because it allows us to primarily consider economic impacts within Vermont while recognizing that schools define their own local purchases in ways that may cross state borders. The most commonly purchased local foods in Vermont are fruits, vegetables, and maple products.[5]

Food Hubs: The U.S. Department of Agriculture defines a food hub as "a centrally located facility with a business management structure facilitating the aggregation, storage,

processing, distribution, and/or marketing of locally/regionally produced food products."[6] Food hubs increase the market size for "small and mid-sized producers."[7]

Vermont Schools: While this report focuses primarily on Vermont public schools (K-12), the literature referenced here is not as limited in scope and may include Vermont primary, secondary, public, independent, interstate, and technical schools.

1.2 Historical Background

Farm to School in Vermont began as early as 2000 through small initiatives such as school gardens. In 2007, the Vermont Agency of Agriculture, Food and Markets (VAAFM) began administering Farm to School grants after the passage of the Rozo McLaughlin Farm to School Act.[8] Since the implementation of the Vermont Farm to School Grant Program, the Vermont Agency of Agriculture has invested nearly $1.4 million in state funds in more than 100 schools.[9]

For nearly two decades, Farm to School programming has grown at varying rates in Vermont school districts. The Vermont Farm to School Network, a charitable organization that advocates for Farm to School efforts in the state, convened a meeting in 2014 that represented a key turning point in centralizing the planning and goal setting of local food programs.[10] The meeting convened more than 60 farm to school advocates from schools, farms, nonprofits, and other interested organizations for a strategic systems mapping process that identified key leverage points that could significantly bolster Farm to School programming.[11]

Today, nearly two-thirds of Vermont schools offer Farm to School programming, with 95 percent of those schools serving local foods in some capacity.[12] As a result, Vermont is a leader in farm to school along with other states on the east coast such as Maine, Delaware, and Maryland.[13]

1.3 Funding by the Vermont State Government

Based on the Rozo McLaughlin Farm to School Act of 2006, the Vermont Agency of Agriculture, Food and Markets (VAAFM) first handed out Farm to School grants in 2007.[14] The grant program was designed to help schools develop, sustain, and build upon relationships with local producers. Since 2007, the Vermont Agency of Agriculture has distributed a portion of state funds, leveraged federal funds, private funds, and foundation funds annually to a select number of applicants to create sustainable Farm to School programs across the state.[15] These applicants include schools, school districts, towns, and nonprofits.[16]

In 2015, the state granted funds to ten applicants.[17] Of those ten, five applicants received funds for planning and the rest received funds for implementation.[18] A planning grant helps schools create a Farm to School action plan, develop a strong support network from the community, and move toward implementing Farm to School programs. [19] An implementation grant provides funding to enact and expand Farm to School programs and offers more financial assistance than a planning grant.[20]

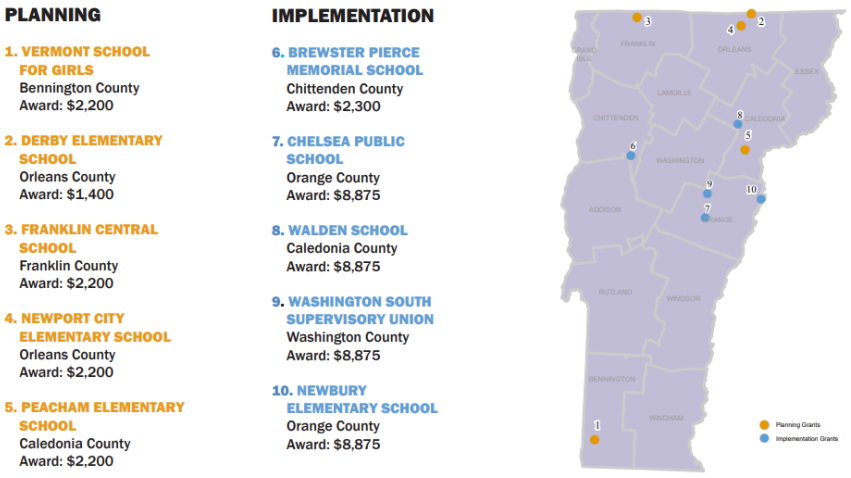


Figure 1. 2015 Grant Program Grantees
Source: "Farm to School Grant History | Agency of Agriculture, Food and Markets."

In 2016, the Vermont Agency of Agriculture received 18 grant proposals. Of those 18, it awarded grants to 13 schools – an increase from the previous year (see Figure 2).[21]

PLANNING GRANTEES

ESSEX TOWN DISTRICT
Chittenden County
Award: $2,500

BELLOWS FREE ACADEMY FAIRFAX
Franklin County
Award: $2,000

CHAMPLAIN VALLEY HIGH SCHOOL
Chittenden County
Award: $2,500

FLOOD BROOK SCHOOL
Bennington County
Award: $2,500

LUND NEW HORIZON EDUCATIONAL PROGRAM
Chittenden County
Award: $2,500

PROCTOR ELEMENTARY SCHOOL
Rutland County
Award: $2,500

IMPLEMENTATION GRANTEES

ARLINGTON MEMORIAL HIGH SCHOOL & MIDDLE & FISHER ELEMENTARY
Bennington County
Award: $5,000

FRANKLIN CENTRAL SCHOOL
Franklin County
Award: $8,700

NEWPORT & DERBY ELEMENTARY SCHOOLS
Orleans County
Award: $9,000

PUTNEY CENTRAL SCHOOL
Windham County
Award: $9,000

TWINFIELD UNION & MAPLEHILL SCHOOL
Washington County
Award: $8,000

TWO RIVERS SUPERVISORY UNION
Windsor County
Award: $9,000

VERMONT SCHOOL FOR GIRLS
Bennington County
Award: $6,000

Figure 2. 2016 Grant Program Grantees
Source: "Farm to School Grant History | Agency of Agriculture, Food and Markets."

1.4 Funding by the Federal Government

The federal government established the Farm to School grant program in 2010.[22] This program provides grants in the form of implementation, planning, support service, and training to eligible entities.[23] Support service grants provide funding to bolster existing Farm to School programs.[24] Training grants help share the best Farm to School practices and strategies.[25] The U.S. Department of Agriculture (USDA) provides funding to eligible schools, state and local agencies, Indian tribal organizations, agricultural producers, nonprofits, and higher education organizations.[26] Between 2013 and 2018, the federal government allocated grants between $14,581 and $100,000 per grant recipient, spending a total of $30.5 million for 33,000 schools.[27] By 2015, the USDA had awarded $1,562,440 to Vermont schools for Farm to School programming.[28]

To help schools cover the cost of providing lunches, school food budgets are subsidized by the USDA. The average school lunch in Vermont costs $3.81 to make; students are charged a discounted rate of $2.63 per lunch.[29] The USDA reimburses schools at a rate of $2.68 per

lunch provided to students who are eligible for free lunch, $2.28 per lunch provided to students who are eligible for reduced price lunch, and $0.25 for the rest of the lunches.[30] Vermont covers the remaining costs with the revenue it receives from students buying lunch at school and the sale of "a la carte" items.[31] In a 2012 policy change to simplify administration of the program, Vermont removed the category of reduced price lunch.[32] Students who were previously eligible for reduced price lunch now receive free lunch, and the state of Vermont covers the gap in federal funding.

1.5 Funding by Local Nonprofits

In addition to receiving state and federal funds, schools can apply for grants through nonprofits. Nonprofit funding is localized and relatively minimal compared to federal and state funding streams. For instance, Vital Communities offers mini grants of up to $500 to support farm to school projects in the Upper Valley.[33] The Vermont Community Foundation, which is a larger organization, offers flexible funds toward charitable goals including farm to school programs.[34]

2. METHODOLOGY

In conducting this research, we first analyzed current literature to determine levels of integration with the Farm to School program, barriers to farm to school integration, community initiatives to increase local food, and resources schools request to increase local food purchases. Using data collected by the Vermont Farm to School Network in 2018, we then performed a regression analysis on disaggregated data to determine which school characteristics are associated with FTS integration levels. To expand our understanding of the local food landscape, we conducted three interviews with four FTS stakeholders to provide insights into the most persistent barriers to local food procurement and to solicit their policy recommendations for addressing these barriers. These stakeholders include: Betsy Rosenbluth, Director of Vermont FEED, Trevor Lowell, Program Manager at the Vermont Agency of Agriculture, Beth Roy, Food and Farm Manager at Vital Communities, and John Plodzik, Director of Dartmouth Dining Services. Next, we analyzed research describing the economic impact of integrating local food into schools, including how different state funding levels for FTS are predicted to affect the local economy. Finally, we analyzed the potential impacts of proposed Senate Bill S.273 and offered alternative policies that the Vermont Senate could consider pursuing.

3. OVERVIEW OF CURRENT LITERATURE

To contextualize Farm to School programming in Vermont, we first summarize the degree of success Vermont schools have had with FTS and identify areas of focus for

policymakers. We then analyze current research articles enumerating the existing barriers to local food purchases, the solutions Vermont communities implement to address these barriers, and the resources schools still need to increase local food integration.

3.1 Farm to School Integration Levels in Vermont Schools

The 2018 Integrated Food, Farm, and Nutrition Programming Data Harvest measures Farm to School (FTS) integration levels of Vermont schools during the 2016 to 2017 school year. The study analyzed all "primary and secondary, public, independent, interstate, and technical schools" in Vermont.[35] To measure the level of FTS integration in schools, researchers asked questions within five focus areas: 1) administrator, faculty, and staff engagement, 2) kitchen infrastructure, 3) cafeteria local purchases (i.e., local food purchases), 4) classroom/curriculum, and 5) community engagement.[36] Based on a cumulative score, schools were categorized as having high, some, or no integration. The Data Harvest found that for schools participating in the study, 13 percent had no FTS integration, 74 percent of schools had at least some FTS integration, and 14 percent of schools had high FTS integration.[37]

The researchers also determined that for the 165 schools who did not submit responses to the Data Harvest survey, 73 percent of those schools had at least some FTS integration.[38] After integrating the data of non-respondents and respondents, the researchers concluded with 95 percent confidence that 80 percent of Vermont schools can be defined as integrated with Farm to School.[39] Of the five content areas that define FTS, local food purchases was the most common form of FTS integration. Eighty-seven percent of Vermont schools purchased local food, in some capacity, in 2018.[40]

The researchers concluded that the number of schools that qualified as FTS schools by the definition the researchers used was 23 percentage points higher than the number of schools that self-reported as FTS schools.[41] This indicates that some schools remain unclear on what the formal FTS program is, yet they still support the concept of farm to school. The ambiguities surrounding definitions of local food and the lack of knowledge regarding FTS integration represent a potential area of focus for policymakers.

3.2 Barriers to Farm to School and Community-Driven Solutions

There are considerable barriers to local food purchases in Vermont. Vermont schools spent $16 million on food in the 2013-2014 school year, but only 5.6 percent of that budget, or $915,000, was spent on local food.[42] It is important to consider the main barriers that prevent schools from increasing their local food purchases. The most frequently-cited barriers are the cost of local food, the inconvenience of purchasing bulk orders of local

food, federal and state regulations, the lack of staff to prepare local food, and the lack of kitchen infrastructure to prepare local food. For each barrier, we examine what communities do to address the barrier and the resources schools request to help them increase local food purchases.

3.2.1 Cost

The most frequently cited barrier to FTS integration, as reported by schools, was financial. 53 percent of Vermont schools reported that the cost of local food is a current barrier, and 58 percent of Vermont schools expected the cost of local food to be a future barrier.[43] As one school employee revealed, "Large food service doesn't get much of a price break for ordering large quantities from small farmers."[44] Schools must also account for the additional labor that serving local food requires including staff, equipment, and training for processing local fruits, vegetables, meats, and other products.[45] Schools address the cost barrier through several different creative solutions, including implementing local fundraisers in the community and selling food made from the school garden.[46]

3.2.2 Convenience

In addition to cost, 42 percent of Vermont schools identified convenience as a barrier to purchasing local foods. Schools explain it is difficult to acquire local food from one source because local producers may not produce the necessary quantity of food.[47] Producers also possess few central means of distribution to aggregate local foods. Many schools purchase the majority of their food through large food distributors that allow schools to shop with one entity, maximizing convenience but minimizing the local impact.[48] To address the convenience barriers, some schools have forged connections with local farms. Schools that have relationships with local farms are three times more likely to purchase local food regularly than schools without these relationships.[49] When asked about resources and solutions to this barrier, 59 percent of schools indicated that having a list of suppliers and product information for local food sources would be the most helpful resource for increasing local food purchases.[50] Meanwhile, 37 percent of Vermont schools said "assistance in developing a system for buying foods from multiple sources" would help schools acquire sufficient local food for their students.[51]

3.2.3 Regulations

Thirty-one percent of schools identified federal and state regulations as a barrier to purchasing local foods because they were unclear about the regulations surrounding Farm to School.[52] Essentially, schools are hesitant to pursue the program given potential legal and structural obstacles. This implies that regulations surrounding Farm to School can

sometimes inhibit local food acquisition, rather than support it. For this reason, 40 percent of schools indicated that access to regulatory information such as legal issues and rules about buying directly from farmers would help address this challenge.[53]

3.2.4 Lack of Trained Kitchen Staff

Twenty-eight percent of schools cited the lack of trained staff as a barrier to preparing local food such as fresh produce and uncooked bulk meat.[54] This barrier relates to the first barrier of cost because schools would need more financial resources to hire staff with broader food preparation experience. Additionally, the lack of expertise in mass food preparation from scratch, as may be needed with many local foods, may require staff training. In response, some schools have established a Farm to School coordinator position. The coordinator can offer "training, logistical coordination, and support, as well as organize fundraisers and write grants," which streamlines the local food acquisition process.[55] This can be an in-house position or contracted out.[56] Schools should consider whether the cost of this position is worth the benefit of increased local food acquisition. Other solutions include using state grants and training assistance from nonprofits to prepare local foods.[57] More than one-third of schools (35 percent) requested "school-tested recipes and menus that incorporate local foods" to overcome this barrier.[58]

3.2.5 Lack of Adequate Kitchen Facilities

More than one-quarter of schools (27 percent) cited the lack of appropriate kitchen facilities to prepare large quantities of fresh produce and meat as a barrier to incorporating local foods.[59] This can also be considered a cost-related barrier. With adequate funding, schools could allocate money toward hiring prep staff and upgrading kitchens to accommodate different types of fresh and local foods. In particular, schools reported benefitting from investing in greater freezer space to store locally purchased produce and meat for longer periods of time.[60]

Other barriers worth addressing include the short growing season that limits local purchasing abilities in a northern state and the complexities of negotiating long-term bidding contracts with farmers and distributors.[61]

4. ANALYSIS OF VERMONT FARM TO SCHOOL DATA HARVEST

The Data Harvest evaluates Farm to School programming throughout Vermont as reported by schools during the 2017-2018 school year. Below we summarize the report released by the Vermont Farm to School Network. We also conducted our own quantitative analysis of

the data to determine what school characteristics are associated with higher FTS integration levels.

4.1 Summary of Data Harvest

The Data Harvest research, conducted through an online survey, grouped schools regionally into five categories: Champlain Valley, Northeast, Central, Upper Valley, and Southern.[62] Schools were asked to evaluate the ability of their kitchens and cafeterias to accommodate local foods.[63] Seventy-eight percent of schools agreed or strongly agreed that their facilities could adequately accommodate local food, though less than half (45 percent) of schools had evaluated their kitchen equipment and capacity.[64] When asked about local purchase habits, 70 percent of schools responded that they had made purchases through intermediaries such as distributors or food hubs, 64 percent said they had purchased from individual producers, Thirty-one percent reported having purchased from processors or manufacturers, and 26 percent said they made purchases from farm, rancher, or fishery cooperatives. [65] Percentages add up to more than 100 percent because respondents could select more than one option.

Schools were also asked to identify resources that would help increase local food procurement. Schools requested assistance in developing a system for buying local food from multiple sources and assistance in identifying which products from large distributors are local.[66] Both resources would help systematize the process of purchasing and increase the decision-making power of schools, leading to higher levels of local food purchases.

Taken together, these responses about FTS integration levels demonstrate the successes that many Vermont schools have had in integrating local food. It also reveals an overarching desire on the part of schools to incorporate more local foods in cafeterias. The following regression analysis offers further insights into which types of schools have been most successful in integrating local food.

4.2 Variables Associated with Farm to School Integration Levels

Using the data from the Data Harvest, we ran several multivariate regressions to determine which factors are associated with whether a school is Farm to School integrated. In our analysis, a school that had at least some level of farm to school integration was considered farm to school integrated. We found that school size was the biggest determinant of whether a school was farm to school integrated. Schools with medium-low student populations, 231-584 students, were 13 percentage points more likely to be farm to school integrated compared to schools with low student populations, 15-230 students. Schools with medium student populations, 585-1,100, were 17 percentage points more likely to be

farm to school integrated compared to schools with low student populations. Likewise, schools with high student populations, 1,101 to 1,800 students, were also 17 percentage points more likely to be integrated than schools with low student populations. Since larger schools have higher FTS integration, this has important implications for policymakers: policymakers may choose to target larger schools. A farm to school coordinator position in a larger school might be more efficient because larger schools purchase more food than smaller ones. Essentially, focusing on larger schools may help maximize the economic impact of local food purchasing because larger schools have a greater need to purchase more local food than smaller ones. Our analysis did not show any regional differences in farm to school integration levels (See Appendix A).

Additionally, we looked to see how much of their food budgets schools were spending on local foods - the focus of our farm to school research. Unfortunately, more than half of the schools did not report how much they spent on local foods, so the conclusions that can be drawn are limited. Of the 171 schools, only 54 schools reported how much of their budget they spent on local food. We could not find a statistical relationship between local food purchases and school size, but we noticed most schools (55 percent) are spending between one and 20 percent of their budget on local food (See Appendix).

5. RECOMMENDATIONS BY VERMONT LEADERS IN FARM TO SCHOOL

To provide context for our quantitative analysis, we reached out to Vermont leaders in Farm to School with experience in increasing local food purchases in schools. We interviewed representatives of four organizations with expertise in different aspects of Vermont Farm to School. We first interviewed the Food and Farm Manager at Vital Communities, an Upper Valley nonprofit that assists schools in acquiring local food. We conducted a joint interview with the Project Director of Vermont FEED, a nonprofit that helps schools develop their Farm to School programs, and the Farm to Institution Program Manager of the Vermont Agency of Agriculture, Food and Markets (VAAFM). Lastly, we interviewed the Associate Director of Dartmouth Dining Services (DDS), the food provider for Dartmouth College. The perspectives gained from the interviews are discussed below in three topic areas: barriers to local food purchases in Vermont schools, barriers to tracking progress of local food acquisition, and suggested policy options to increase local food in schools.

5.1 Barriers to Local Food Purchases in Vermont Schools

In section 4.2, we provided an overview of the barriers to purchasing local food. Based on our interview data, we focus on two significant challenges and examine why these challenges remain in place.

The first challenge for schools is regulations, especially in a program implemented by the federal government. According to Beth Roy, the Food and Farm Manager at Vital Communities, schools typically do not purchase certain local foods if they are unsure of the corresponding regulations.[67] This can make schools hesitant to incorporate more local food out of fear of violating regulations and facing liability. Betsy Rosenbluth, the Project Director of Vermont FEED, also emphasized that schools are busy completing paperwork per state and federal regulations, which reduces the time they have to meet local producers and purchase local food.[68] She argues that due to a general fear among policymakers that schools will misuse funds, policymakers require a high volume of paperwork that hinders the ability of schools to implement FTS programs.

The second challenge for schools is the higher cost of local food. According to Jon Plodzik, Director of Dartmouth Dining Services, local food is typically more expensive than non-local food, even when local food is in season.[69] He explained that DDS would like to buy more Vermont apples, for example, but they are more expensive than Washington apples, regardless of season. The northern climate of Vermont also means a longer off season, decreasing the amount of time available to purchase local food.

Director Rosenbluth also suggested that the federal formula to reimburse schools for their meals is inadequate; the funding shortfall forces schools to focus on the bottom line, rather than incorporating more local food. In a 2011 article on overcoming barriers to providing local produce, Dr. Erin Roche reiterates that funding from the federal government does not provide the "budgetary flexibility" necessary to purchase local food.[70] Instead, it only provides sufficient funding to produce a school lunch made from "canned foods and commodity goods."[71]

The cost barrier is amplified by the fact that food distributors operate in economies of scale. It is cheaper and more efficient for food distributors to make bulk purchases from a large agricultural conglomerate than to make a series of smaller purchases from individual producers. However, with increased funding for local food, Director Rosenbluth argues that schools can demand more local food, and food distributors would adjust to this increased demand.

5.2 Challenges to Tracking Progress of Local Food Acquisition

When schools overcome these barriers and attempt to purchase local food, they still struggle with identifying whether the food is local. This is particularly true, according to DDS, when it comes from large food distributors like Reinhart or Sysco. These distributors do not consistently source identify, so they often cannot tell schools where their food comes

from. According to Vital Communities, Reinhart Foodservice is occasionally able to define food as regional with labels like "regional carrots," but it remains unclear if this regional definition could be considered local according to our definition.

Program Director Betsy Rosenbluth of Vermont FEED and Associate Director Don Reed of DDS agreed that it is easier to determine if food is local when purchased from food hubs and individual producers (farm operators) compared to large distributors.[72] Food hubs and producers typically have closer connections with local farmers, which makes it easier to source identify. For example, Black River Produce in North Springfield, Vermont can source identify, according to Vermont FEED. However, in another example of market forces working against FTS, the recent acquisition of Black River Produce by Reinhart may affect its ability to continue to source identify.

5.3 Suggested Policy Solutions

To overcome the aforementioned barriers and improve school participation in FTS programs, Betsy Rosenbluth and Beth Roy suggested three initiatives they believe would be most useful to schools: increase funding, decrease paperwork requirements, and provide information and training to foodservice staff on local food preparation.

5.3.1 Increase Funding to Schools

Both interviewees argued that the most direct means to increase local food in schools is to give schools the financial resources to overcome the significant hurdle of cost. With more funding to establish local purchases, markets would have an opportunity to adjust to the higher demand for local food. It would then be in the financial interest of food providers (distributors, food hubs, producers) to supply more local food to meet this shift in demand. When asked what an ideal policy would look like regarding school meals, Beth Roy recommended that the state provide universal free breakfast and lunch for all schools. She argues that by eliminating the administrative burden, such a policy would give schools more time and resources to focus on local food purchases rather than the bottom line.

5.3.2 Reduce Paperwork for Schools

Director Rosenbluth discussed the challenge that labor-intensive paperwork poses for food service staff, who often spend hours tracking metrics like the percentage of students who qualify for free lunch, rather than using the time to meet with farmers or take next steps toward FTS integration. Director Rosenbluth argued that policies that reduce reporting requirements of individual schools would lift a significant burden from food service staff, who could then implement more local food procurement. Vermont recently eliminated

reduced-price lunch. This step was helpful in reducing the time schools spent tracking which students were eligible for free versus reduced lunch, and the state now covers the cost difference between the two. Reducing or even eliminating eligibility tracking would not only save time and money but likely reduce the stigma associated with receiving reduced-price meals.

5.3.3 Provide Information and Training to Schools

Beth Roy and Betsy Rosenbluth agreed that food service staff often do not have knowledge of all of the requirements of local procurement under federal rules. Essentially, there is an information gap. One important step toward empowered decision-making for schools would be the education of food service staff about which policies govern their decisions. The second step would be training food service staff on the preparation of local produce and meats for large-scale consumption, so they could feel confident that local foods meet the same health and safety standards as the traditional foods they serve.

6. ECONOMIC IMPACT OF FARM TO SCHOOL IN VERMONT

From analyzing barriers to Farm to School implementation and consulting with experts, our analysis has illustrated a few ways the Vermont legislature may increase local food purchases in schools. We next examine how increases in local food purchases are estimated to impact local economies and the state economy.

In 2016, the Economic Value Working Team of the Vermont Farm to School Network, the Center for Rural Studies (CRS), and the Department of Community Development and Applied Economics (CDAE) at the University of Vermont (UVM) collaborated to publish a comprehensive economic report. In this report, they estimated the impact of local food spending by schools on the local and state economies of Vermont by examining school spending from 2013 to 2014. During this period, Vermont schools spent sixteen million dollars on their food budget. Five percent of the food budget, or $915,000, was spent on local foods. Using data from the Vermont Agency of Education, the report makes projections for five different local food spending scenarios by Vermont schools to estimate the economic impacts of local food spending.

6.1 Estimated Effects of Local Food Purchases on Local Economies

	Baseline Estimate	Scenario 1	Scenario 2a	Scenario 2b	Scenario 3
Food purchased directly from the farm sector	$135,175	$202,762	$5,352	$37,713	-$135,175
Food purchased directly from the food processing sector	$165,050	$247,575	$6,535	$46,048	-$165,050
Farm products purchased from wholesalers or food hubs	$146,610	$219,915*	$5,805*	$40,903*	-$132,535
Processed food purchased from wholesalers or food hubs	$468,108	$702,162*	$18,535*	$130,601*	-$424,574
Wholesale sector margins	N/A	-$21,458	-$1,756	-$5,092	$87,194
Truck transportation sector margins	N/A	-$9,321	-$763	-$2,212	$37,878
TOTAL	$914,943	$1,341,635	$33,708	$247,961	-$732,262

* These purchases were margined. That is, a share of these purchases was allocated to the sector of production and a share of the expenses were allocated to the wholesale and truck transportation sectors.

Figure 3: Projected Allocation of Local Food Purchases by Vermont Schools
Source: "Roche et al | Economic Contribution and Potential Impact of Local Food Purchases Made by Vermont Schools"

The five scenarios in Figure 3 represent different levels of spending by Vermont schools on local food. The baseline scenario represents the estimated economic impact of local food spending based on how much schools spent in 2014.[73] The remaining scenarios are all estimates made with different assumptions. In scenario 1, 75 percent of Vermont schools would hypothetically double their local food purchases. Scenario 2a describes a pilot program with five schools that qualify for the Community Eligibility Provision, meaning these schools provide meals at no cost to all students because they receive federal reimbursement.[74] These schools are often in low income neighborhoods, where a large portion of the student body has free or reduced lunch. The scenario 2a pilot program looks to increase local food purchases from these five schools by ten percentage points.[75]

Similarly, scenario 2b describes the same hypothetical pilot program except 40 schools would qualify for the Community Eligibility Provision, and these 40 schools would

increase their local food spending by ten percentage points.[76] Taken together, scenarios 2a and 2b are low and high estimates of the number of schools that would qualify for the Community Eligibility Provision (CEP) due to ambiguity over how many schools would be eligible under the provision.[77] Finally, scenario 3 projects the impact of schools ending all local food purchases. This means that schools stop purchasing from local farmers and producers and buy only from wholesale distributors.[78]

The baseline estimate, which measures local food spending in 2014, was estimated to generate $1.4 million in sales in the farm and food processing sector. In other words, local food purchases by schools in 2014 directly contributed $1.4 million to the economy.[79] The baseline scenario was also estimated to generate $485,000 in total value-added – a measure that counts both the indirect and induced effects of wages, profits, dividends, interests, rents, and excise taxes. The indirect effect "results from food suppliers purchasing goods and services and hiring workers to fill the school's order."[80] [81] In addition, under the assumptions of the baseline scenario, local food spending helped support 7.3 jobs, with 3.2 of those jobs in the food processing sector.[82] In scenario 1, the increase in local food purchases from 5.6 percent to 11.2 percent would generate $2.1 million in sales and $693,000 in total value-added.[83] In addition, for every dollar in total value-added, an additional $1.20 is contributed to the farm and food processing sectors.[84] The effects shown in scenario 1 are relatively modest because scenario 1 assumes schools will increase local food purchases using existing food budgets without additional funding from the state or other forms of programmatic investment.[85]

Comparing the two pilot programs, the five participating schools in scenario 2a would generate $53,000 in sales and $19,600 in total value-added (with $11,300 of the total value-added in the farm and food processing sectors).[86] With 40 schools in scenario 2b, $390,000 would be generated in sales and $125,000 in total value-added. $62,000 of the money generated in total value-added would go to the farm and food processing sectors.[87]

Scenario 3 suggests that ending all local food purchases would lead to a loss of $1.2 million in sales and a loss of $856,000 in the farm and food processing sector.[88] In addition, there would be a loss of $357,000 in total value-added, and $280,000 of that loss would be in the farm and food processing sectors.[89]

Ultimately, the report finds that from 2013 to 2014, each additional dollar spent by schools on local foods contributed an additional sixty cents to the local economy.[90] The effect on the state economy was modest.

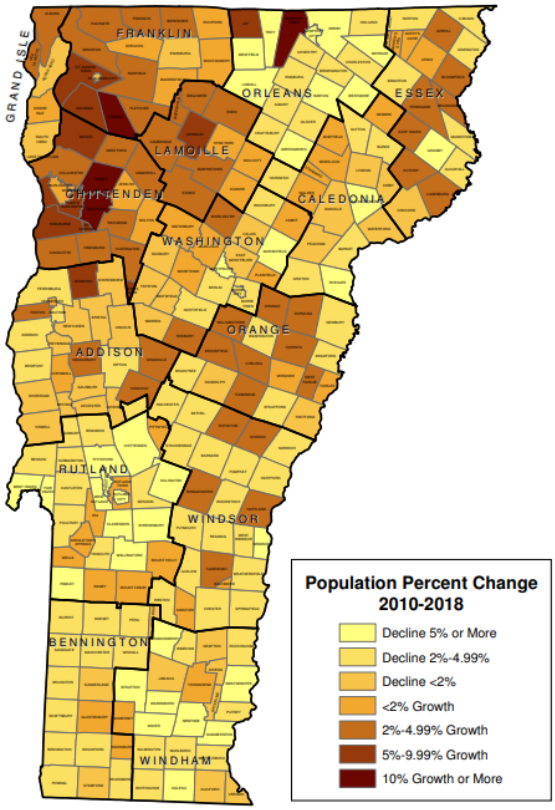


Figure 3: Population Change by Town, 2010 to 2018
Source: Vermont Department of Health | "Vermont Change in Population Estimates"

6.2 Concerns with Economic Impact Report

The 2016 report described above estimated the economic impacts of local food purchases by Vermont schools on the state economy, but it failed to mention how ongoing changes in population demographics in Vermont impact local food purchases and local economies. Many towns in the southern counties of Vermont saw two to five percent population declines from 2010 to 2018 (see Figure 3). In addition, the median age of Vermont residents in 2018 increased to 43 years.[91] Counties with older residents and smaller town populations may not see the same benefits to local food because the cost for implementation could outweigh any economic contribution to the local economy. The schools in these small towns will also likely have low student enrollment.

From our regression analysis, we found that smaller schools are the least likely to be Farm to School integrated. One potential explanation is that larger schools may have sufficient

resources to hire a Farm to School coordinator who can manage the logistical issues of Farm to School implementation and local food spending. For a small school on a tight budget, a full-time Farm to School coordinator might be too costly. If this is true, the changing demographics in Vermont could alter the predicted economic impacts of local food spending, to the extent that small towns might see little or no economic benefit. However, school districts in these small towns could join together to hire a farm to school coordinator to help increase local food purchases.

7. POLICY OPTIONS FOR VERMONT SENATE BILL S.273

Having analyzed the economic impacts of local food purchases, we now investigate Senate Bill S.273, as referred to the Committee on Agriculture on January 14, 2020, regarding its goal to increase local food purchases by schools.[92] After describing the bill, we discuss potential implications of its passage in present form and explore alternative policy options suggested by our research.

7.1 Summary of Vermont Senate Bill S.273

Senate Bill S.273 establishes the goal that by 2022, at least 20 percent of all food purchased by Vermont schools should be locally produced.[93] It attempts to achieve this goal by proposing a tiered system of funding for schools based on their level of local food purchases.[94] Under the bill, schools that report at least 15 percent local food purchases (of their total food budget) would meet the threshold to apply for funding at a rate of 15 cents per plate served.[95] Subsequent funding would be allocated at additional five percent increments until a school reaches 25 percent local food purchases.[96] Thus, a school with 20 percent local food purchases would receive 20 cents per plate, and a school with 25 percent local food purchases would receive 25 cents per plate.[97] Schools in between thresholds (e.g., 17 percent local food purchases) would receive funding at the lower threshold (i.e., 15 cents per plate).[98] The bill also discusses increasing local food purchases for correctional facilities.[99]

7.2 Implications of Senate Bill S.273

Senate Bill S.273 is commendable in its efforts to reward schools for increasing their local food purchases. However, in light of our research, we have identified areas of concern and potential unintended consequences of the bill.

First, if all Vermont schools have to report their local food purchasing levels to the Vermont Agency of Agriculture, Food, and Markets, this would increase the amount of paperwork schools must complete for FTS, thus magnifying an issue that is already of concern. This

additional paperwork may decrease the amount of time schools can spend on finding and purchasing local food. In addition, many Vermont schools would struggle with source identification, making it harder to accurately report local food purchases to the agency. As a result, the Agency of Agriculture, Food, and Markets may struggle with ensuring the accuracy of the data, making it a challenge to correctly appropriate funds to schools.

Second, if schools have to submit a separate request for agency funding after already reporting their levels of local food purchases to the agency (mentioned in the previous paragraph), this adds an additional step for schools. Schools who meet the threshold for funding may not know or may not have the resources to submit an additional application to receive funding.

Third, the goal of 20 percent local food purchases by 2022 will be difficult to achieve. In 2014, Vermont schools spent 5.6 percent of their school budget, on average, on local food, and we have not found evidence that there has been a significant increase in local food purchases between 2014 and 2020.[100] If this is correct, the average Vermont school would have to increase their local food purchases by 257 percent between 2014 and 2022 to reach the 20 percent goal.

Fourth, the tiered system of funding would give more funding to schools with higher existing local food purchases than schools with lower local food purchases. Under this plan, schools currently spending little on local food (e.g., five percent local food) will not receive funding to reach the 15 percent threshold. As a result, while the bill rewards schools who reach the 15 percent threshold, it does not provide direct assistance to help these schools overcome the barriers to reaching that threshold. Schools would only receive funding well after they had spent extra money on local food. It is possible that this could widen the gap between schools with high local food purchases (which would be eligible for funding) and schools with low local food purchases (which would be ineligible for funding).

Fifth, if the goal of the bill is to increase local food purchases among schools near the margins of each of the three thresholds and among schools who already demonstrate a high degree of local food purchases, then it successfully achieves its goals. In other words, a school with 14 percent local food purchases will have to spend very little money to meet the 15 percent threshold and obtain funding from the state. However, a school currently spending eight percent on local food would have to invest significantly more money to reach the 15 percent threshold, leading to little or no return on that investment after meeting the threshold.

7.3 Alternative Policy Options

In the following sections, we suggest policy alternatives to Senate Bill S.273 that consider some of the additional barriers to FTS integration left unaddressed by the current version of the bill.

7.3.1 Target Food Hubs

As an alternative to the proposed legislation, the Vermont legislature could consider targeting resources toward food hubs rather than schools. Bolstering the food hub system may be integral in reducing the barrier of inconvenience, providing schools with central locations to purchase different types of local foods from around the state. A more systematic food hub network would support a large-scale regionalization of local food purchases, potentially allowing multiple adjacent school districts to access the same food sources and negotiate contracts together. This would eliminate some of the redundancy of individual school districts negotiating multiple contracts with farmers, producers, and distributors. While this coordination effort exists to some extent in Vermont, it is largely implemented by nonprofit organizations and is not sufficiently centralized to maximize its potential impact. To begin this process, Vermont could first start centralizing information, looking to the Iowa Food Hub Directory as an example.

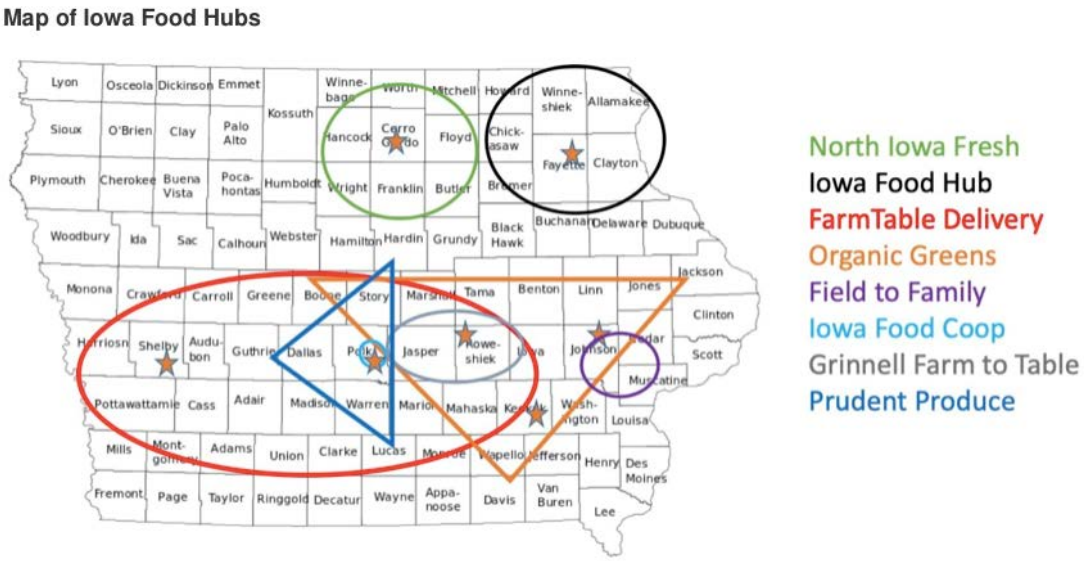


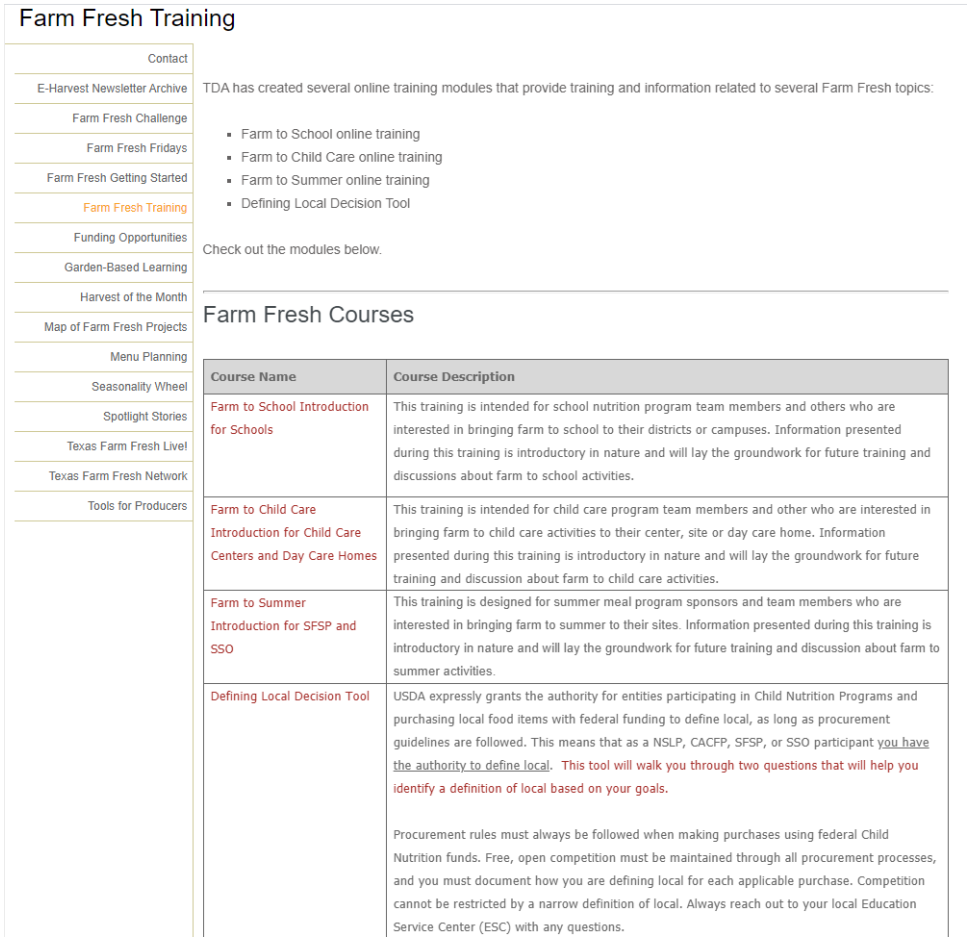
Figure 4: Iowa Food Hub Directory Map
Source: Iowa State University | "Iowa Food Hub Directory"

The Iowa Food Hub Directory includes a map of each school district and its corresponding food hubs.[101] Iowa coordinates local food purchases through a Farm to School Council established in 2007. The Council, coordinated by the Iowa Department of Agriculture, is comprised of private sector and public sector members that work to improve communication and cooperation between schools and farmers.[102]

By comparison, Vermont in 2011 established a similar FTS coordinator position at the Agency of Agriculture to facilitate coordination, information gathering, and tracking of relevant regulations; however, given the apparent lack of centralized information on these topics, it is possible that this position is currently underutilized.[103] While Vermont has taken preliminary steps toward systematization of the school and food hub network, allocating additional resources to food hubs would strengthen the organization and efficiency of a regional approach to local food procurement.

7.3.2 Centralize Farm to School Information

One of the biggest barriers outlined in this report is that schools lack enough information about federal and state Farm to School regulations. If schools could overcome this information gap and the regulatory barrier, they would be more willing to purchase local food. As a result, the state could publish information on regulations in a concise visual or report on the Agency of Agriculture, Food, and Markets website for schools to view. In addition, the state could work with nonprofits who have information about how much schools spend on local foods to make the information gathering process easier. The information from nonprofit organizations could be used to show a school how it compares to others in its county and the state. Also, the website could have a list of nonprofit organizations willing to help schools with the logistical and technical issues related to local food purchases. Finally, the website could incorporate a feature where schools could enter their zip code to find local food producers in their area. This centralization tool would make it more convenient for Vermont schools to find local food.



Farm Fresh Training

Contact
E-Harvest Newsletter Archive
Farm Fresh Challenge
Farm Fresh Fridays
Farm Fresh Getting Started
Farm Fresh Training
Funding Opportunities
Garden-Based Learning
Harvest of the Month
Map of Farm Fresh Projects
Menu Planning
Seasonality Wheel
Spotlight Stories
Texas Farm Fresh Live!
Texas Farm Fresh Network
Tools for Producers

TDA has created several online training modules that provide training and information related to several Farm Fresh topics:

- Farm to School online training
- Farm to Child Care online training
- Farm to Summer online training
- Defining Local Decision Tool

Check out the modules below.

Farm Fresh Courses

Course Name	Course Description
Farm to School Introduction for Schools	This training is intended for school nutrition program team members and others who are interested in bringing farm to school to their districts or campuses. Information presented during this training is introductory in nature and will lay the groundwork for future training and discussions about farm to school activities.
Farm to Child Care Introduction for Child Care Centers and Day Care Homes	This training is intended for child care program team members and other who are interested in bringing farm to child care activities to their center, site or day care home. Information presented during this training is introductory in nature and will lay the groundwork for future training and discussion about farm to child care activities.
Farm to Summer Introduction for SFSP and SSO	This training is designed for summer meal program sponsors and team members who are interested in bringing farm to summer to their sites. Information presented during this training is introductory in nature and will lay the groundwork for future training and discussion about farm to summer activities.
Defining Local Decision Tool	USDA expressly grants the authority for entities participating in Child Nutrition Programs and purchasing local food items with federal funding to define local, as long as procurement guidelines are followed. This means that as a NSLP, CACFP, SFSP, or SSO participant you have the authority to define local. This tool will walk you through two questions that will help you identify a definition of local based on your goals. Procurement rules must always be followed when making purchases using federal Child Nutrition funds. Free, open competition must be maintained through all procurement processes, and you must document how you are defining local for each applicable purchase. Competition cannot be restricted by a narrow definition of local. Always reach out to your local Education Service Center (ESC) with any questions.

Figure 4: Texas Farm to School Site Map, March 2020
Source: "Farm Fresh Training| Texas Department of Agriculture"

Texas, for example, has information about federal and state regulations, local food purchasing through distributors, farm to school training and implementation, and food safety on its Department of Agriculture website (see Figure 4).[104] Additionally, the website provides recommendations on how schools can increase local food purchases with their existing food budgets.[105] The Texas Farm to School website may be accessed at: http://www.squaremeals.org/FandNResources/TexasFarmFresh.aspx .[106]

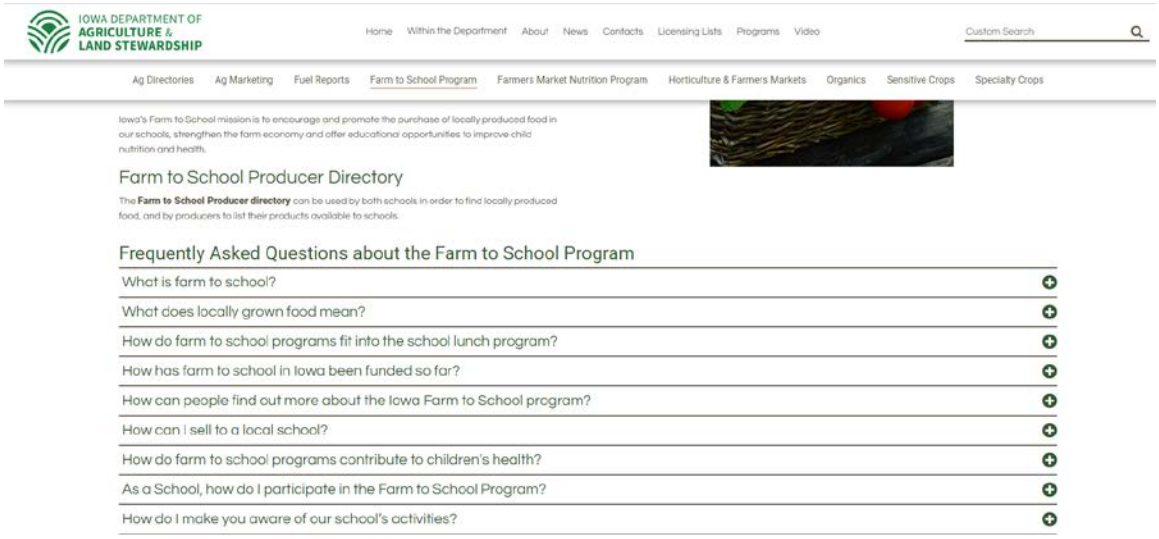


Figure 5: Iowa Department of Agriculture Farm to School Website, March 2020
Source: "Iowa Farm to School Program | Iowa Department of Agriculture and Land Stewardship,"

Similarly, the Agency of Agriculture website for Iowa explains how schools can start a Farm to School Program and provides information about farm markets (See Figure 5).[107] The Iowa Farm to School website is located at: https://iowaagriculture.gov/agricultural-diversification-market-development-bureau/iowa-farm-school-program.[108]

7.3.3 Optimize School to Food Distributor Relationships

To reduce the burden on schools of increasing local food, the state could spread the financial responsibility between schools and distributors. The goal of integration would be more feasible if large distributors, who are the main suppliers of local food, are brought to the table. In our research, we attempted to interview large distributors, but we were unable to collect responses from them. On the other hand, the Vermont State Senate has the authority to bring large distributors to the table and strengthen the relationship between schools and distributors to increase local food acquisition. For instance, the Vermont State Senate may seek to require that school food contracts include a certain percentage of local food. Currently, food contracts with distributors are managed at the school district level. If the scale of contracts were aggregated to the state level, the state, with its greater bargaining power, could obtain more affordable prices from distributors and reduce redundancies between school district contracts. The state could incentivize distributors to source-identify

their products through written requirements in contracts, so schools are aware which food purchases are truly local.

7.3.4 Amend S.273 to Include Schools with Lower Local Food Purchases

Finally, the original bill could be altered to expand the threshold for state funding to capture more schools who have not yet established robust local food programming. For instance, the threshold could be scaled down so the first threshold starts at five percent, instead of 15 percent, and increases by five percent intervals until you reach 20 percent (with funding increasing incrementally as well). Our data indicates that the majority of Vermont schools fall in this zero to 20 percent range, so by lowering the thresholds, the state could incentivize more Vermont schools to increase local food purchases. In addition, smaller schools with very low local food purchases (zero to five percent) could receive state funding according to a different formula specifically for smaller schools. We know smaller schools face a bigger challenge because of economies of scale, so providing another funding source could help these schools overcome barriers to purchasing local foods.

In conclusion, while the bill represents an excellent first step toward the goal of increasing local food purchases in schools, these proposed options highlight opportunities the Vermont legislature may pursue with potentially greater chances for success in increasing local food in Vermont schools.

APPENDICES

Appendix A. Statistical Tables and Figures

Table 1 shows that the results of a statistical regression of farm to school integration level on school size based on data from the Data Harvest. In our analysis, the key outcome variable *integrated* is a dummy variable that takes on a value of one if a school is farm to school integrated, and zero otherwise. Our outcome variable is a measure of a school's total farm to school integration-based on levels of farm to school integration across five different content areas, administrative integration, kitchen infrastructure integration, cafeteria integration, classroom/ curriculum integration, and community integration. In the Data Harvest, total integration was a categorical variable that takes on a value of zero for schools with no farm to school integration, one for schools with some farm to school integration, and two for schools with high levels of farm to school integration. In our analysis, we considered schools with some farm to school integration as farm to school integrated. We ran a regression of our outcome variable *integrated* on four dummy variables, *low enrollment, medium low enrollment, medium enrollment, and high enrollment* which measure student enrollment numbers at a school. There were 171 schools reported in the data set, however; some schools had no farm to school integration or student enrollment data and were dropped from the analysis. Schools in the *low enrollment* category had 15 to 230 students; Schools in the *medium low* enrollment category had 231 to 584 students; Schools in the *medium enrollment* category had 585-1,100 students; and schools in the *high enrollment* had 1,101 to 1,800 students. Our estimates measure the percentage point chance of being integrated for schools with medium low, medium, and high student enrollment compared to schools with low student enrollment, the excluded category.

We found that schools with medium low student enrollment levels were 13 percentage points more likely to be integrated compared to schools with low student enrollment levels. Additionally, schools with medium and high levels of student enrollment were 17 percentage points more likely to be farm to school integrated than schools with low levels of student enrollment. All our estimates were found to be statistically significant at the one percent significance level, meaning that if there were no true relationship here, a pattern like this could be seen by chance alone less than 1% of the time.

Table 1: Regression of Farm to School Integration on School Enrollment Categories

VARIABLES	(1) Integrated Regression
Medium Low Enrollment	0.130***
	(0.0493)
Medium Enrollment	0.170***
	(0.0406)
High Enrollment	0.170***
	(0.0406)
Constant	0.830***
	(0.0406)
Observations	161
R-squared	0.055

Robust standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

Table 2 is a cross tabulation of the school enrollment category variables on the total percentage of their food budgets schools reported spending on local food. Of the 171 schools, only 54 reported data on how much of their food budget they spent on local foods. The vast majority of reporting schools (55 percent) indicated they had spent between one and 20 percent of their food budgets on local food.

Table 2: Cross Tabulation of School Enrollment Categories on Local Food Spending

	Percentage Spent on Local Food								
Enrollment Category	0%	1- 10%	11-20%	21-30%	31-40%	41-50%	51-60%	61-70%	**Total**
Low Enrollment	5	7	7	5	1	0	1	2	**28**
Medium Low Enrollment	1	6	7	1	3	1	0	0	**19**
Medium Enrollment	0	1	2	2	0	0	0	0	**5**
High Enrollment	0	0	0	1	1	0	0	0	**2**
Total	**6**	**14**	**16**	**9**	**5**	**1**	**1**	**2**	**54**

Table 3 is a cross tabulation of the school enrollment category variables on the integrated dummy variable, the outcome variable in the regression. The table shows that of the 161 schools in the regression 125 were not farm to school integrated.

Table 3: Cross Tabulation of School Enrollment Categories on Integration

	Not Integrated	Integrated	
Enrollment Category	0	1	**Total**
Low Enrollment	69	19	**88**
Medium Low Enrollment	36	14	**50**
Medium Enrollment	16	3	**19**
High Enrollment	4	0	**4**
Total	**125**	**36**	**161**

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