

# Journal of Rural and Community Development

## Scaling up ‘Local’ in School Food Programs: Exploring Intermediated Farm-to-school Procurement In Ontario

**Authors:** Amberley T. Ruetz & John Smithers

**Citation:**

Ruetz, A. T., & Smithers, J. (2023). Scaling up ‘local’ in school food programs: Exploring intermediated farm-to-school procurement in Ontario. *The Journal of Rural and Community Development*, 18(2), 119–151.

**Publisher:**

Rural Development Institute, Brandon University.

**Editor:**

Dr. Doug Ramsey

**Open Access Policy:**

This journal provides open access to all of its content on the principle that making research freely available to the public supports a greater global exchange of knowledge. Such access is associated with increased readership and increased citation of an author's work.



**BRANDON  
UNIVERSITY**  
Founded 1899



## Scaling up ‘Local’ in School Food Programs: exploring intermediated farm-to-school procurement in Ontario

**Amberley T. Ruetz\***

University of Saskatchewan  
Saskatoon, Saskatchewan, Canada  
[Amberleyruetz@gmail.com](mailto:Amberleyruetz@gmail.com)

**John Smithers**

University of Guelph  
Guelph, Ontario, Canada  
[jsmither@uoguelph.ca](mailto:jsmither@uoguelph.ca)

\*Corresponding author

### Abstract

In North America, *farm-to-school* (F2S) initiatives that link farms directly with schools have been cited to have the potential to provide a substantial boost to the agri-food sector, especially local and regional rural economies. Limited human resources, food processing and distribution infrastructure, however, have made these direct purchasing arrangements challenging. In Ontario, Canada, a similar decentralized school food procurement model predominates, where volunteers are responsible for purchasing, transporting, and preparing meals for schools individually. One alternative is intermediated F2S food procurement, a regional value chain approach to local food procurement that enrolls additional actors between farm and school. In attempting to quantify the economic activity associated with F2S, many analyses have focused on the direct F2S model or have not specified the delivery mechanism. This paper reports on an intermediated approach coordinated by non-profit organizations (NPOs) in Ontario, Canada, that seeks to model the desired benefits of F2S approaches, but at a regional scale. Attention is given to both the organizational or ‘architectural’ features of such programs and to the level of economic activity such programs produce. Primary purchasing data from two NPO-intermediated F2S programs (n=611 schools)—one in Southwestern Ontario and one in Northern Ontario—and three non-intermediated or ‘decentralized’ programs were used to examine the types, quantities, and provenance of fruit and vegetables purchased in 2019 (pre-pandemic) and identify possibilities for and the supports required to expand local procurement of fresh fruits and vegetables by Ontario schools. The intermediated F2S model procured an average of 37% of Ontario-grown food across all purchases in the study time period compared to the average of 19% by the comparator decentralized schools, providing preliminary evidence of the potential value of NPO-intermediated F2S models.

**Keywords:** school meals; local food; food supply chains; public procurement; public sector catering

# Mise à l'échelle « locale » dans les programmes alimentaires scolaires : exploration de l'approvisionnement intermédié de la ferme à l'école en Ontario

**Amberley T. Ruetz\***

University of Saskatchewan  
Saskatoon, Saskatchewan, Canada  
[Amberleyruetz@gmail.com](mailto:Amberleyruetz@gmail.com)

**John Smithers**

University of Guelph  
Guelph, Ontario, Canada  
[jsmith@uoguelph.ca](mailto:jsmith@uoguelph.ca)

\*auteur correspondant

## Résumé

En Amérique du Nord, les initiatives de la ferme à l'école (F2S) qui relient directement les fermes aux écoles ont été citées comme ayant le potentiel de donner un coup de pouce substantiel au secteur agroalimentaire, en particulier aux économies rurales locales et régionales. Toutefois, les ressources humaines limitées, la transformation des aliments et l'infrastructure de distribution ont rendu ces accords d'achat direct difficiles. En Ontario, au Canada, un modèle similaire d'approvisionnement en aliments scolaires décentralisés prédomine, où les bénévoles sont responsables de l'achat, du transport et de la préparation des repas pour les écoles individuellement. Une alternative est l'approvisionnement alimentaire intermédié F2S, une approche de chaîne de valeur régionale pour l'approvisionnement alimentaire local qui inscrit des acteurs supplémentaires entre la ferme et l'école. En tentant de quantifier l'activité économique associée à la F2S, de nombreuses analyses se sont concentrées sur le modèle F2S direct ou n'ont pas spécifié le mécanisme de livraison. Cet article rend compte d'une approche intermédiée coordonnée par des organismes à but non lucratif (OBNL) en Ontario, au Canada, qui cherche à modéliser les avantages souhaités des approches F2S, mais à l'échelle régionale. Une attention particulière est accordée à la fois aux caractéristiques organisationnelles ou « architecturales » de tels programmes et au niveau d'activité économique qu'ils produisent. Les données sur les achats primaires de deux programmes F2S intermédiés par des OBNL (n = 611 écoles), une dans le Sud-Ouest de l'Ontario et une dans le Nord de l'Ontario, et de trois programmes non intermédiés ou « décentralisés » ont été utilisées pour examiner les types, les quantités et la provenance des fruits et légumes achetés en 2019 (avant la pandémie) et déterminer les possibilités et les soutiens requis pour accroître l'approvisionnement local en fruits et légumes frais par les écoles de l'Ontario. Le modèle F2S intermédié a permis d'acheter en moyenne 37 % des aliments cultivés en Ontario pour tous les achats au cours de la période étudiée, comparativement à la moyenne de 19 % pour les écoles décentralisées de comparaison, ce qui fournit des preuves préliminaires de la valeur potentielle des modèles F2S intermédiés par les OBNL.

**Mots-clés :** repas scolaires; nourriture locale; les chaînes d'approvisionnement alimentaire; les marchés publics; restauration du secteur public

## 1.0 Introduction

Public institutions, as major food purchasers, can shape markets, impact public health, and influence the range of products available while providing stable prices, thereby increasing market opportunities, and reducing risk for producers (Noonan et al., 2013). Farm-to-school (F2S) food programs are an example of how food procurement can be used to achieve these goals, and public procurement of locally-grown food, in particular, has been cited as a key market opportunity for small and medium-sized producers (Feenstra & Hardesty, 2016; Reynolds & Hunter, 2019). F2S aims to connect farms and schools in local and/or regional catchments—to the benefit of both. On the farm side, it is held that producers, particularly small and medium-size producers less active in mainstream agricultural commodity markets have enhanced opportunity in the form of a new and sometimes large market—for some a market innovation that may contribute to enterprise viability (Reynolds & Hunter, 2019). On the school side, as framed in the F2S narrative, there is improved access to fresh food with better assured quality and traceability, and the prospect of establishing relationships in support of stable business practices (Feenstra & Ohmart, 2012; Vallianatos et al., 2004).

Beyond these economic features, in its idealized form, F2S seeks to enhance students' food literacy, knowledge of farm and food systems and personal health. Accordingly, school food and F2S have now found themselves squarely included in contemporary debates about possible pathways to healthy eating, social inclusion, ecological sustainability and, importantly for purposes of this paper, local rural economic development and domestic food market capture (Bagdonis et al., 2009; Feenstra & Hardesty, 2016; Feenstra & Ohmart, 2012; Joshi et al., 2008). F2S food programs have taken root in many jurisdictions, including the Canadian Province of Ontario, where they are poised to undergo a widespread expansion with attendant implementation challenges and opportunities—especially on the food procurement side—that need to be identified and better understood.

While F2S is frequently associated, at least at its conceptual core, with direct or near direct interactions between small and midsize (local) producers on the one hand and school-level food purchasers on the other, the model is accompanied by a variety of pragmatic challenges, and these are well documented by researchers and practitioners alike. Hurdles on the farm side have been seen to include such things as requirements for 'good agricultural and food handling practice' certifications, inconsistent product availability to meet demand based on seasonal variations in growing conditions, limited capacity to coordinate and maintain purchasing relationships, uncertain and/or low profitability and viability of low-volume sales, and challenges coordinating delivery logistics (Berkenkamp, 2006; Gregoire & Strohbehn, 2002; Izumi et al., 2010; Matts et al., 2016; Rosenberg & Leib, 2011). Schools also face their own challenges, such as limited capacity to coordinate and maintain purchasing relationships, limited kitchen facilities to process whole foods, tight budgets, and a desire for smaller quantities delivered on a more frequent basis (Fitzsimmons & O'Hara, 2019; Powell & Wittman, 2018).

Given these challenges, many schools and school districts have turned to broadline distributors who offer a wide range of (often undifferentiated) products and, in some cases, regional food distributors who may well source locally, thus eliminating the need to find, vet, and communicate directly with producers (Conner et al., 2012). Indeed, regional food distributors have emerged as important actors in balancing convenience and consolidating procurement practices with the ability of school food

actors to seek products of local provenance and specify other product attributes they desire. Plakias et al.'s (2020) analysis of American Farm to School Census data collected by the USDA's Food and Nutrition Service found that more than 70% of school food authorities obtained food products, including local food indirectly through intermediaries (i.e., regional food distributors and broadline distributors that offer 'one-stop-shopping' to an assortment of products; however, most studies have focused on the direct F2S model or have not specified how the food travels from the farm to the school (Christensen et al., 2018).

Distinct from economic analyses of F2S featuring the contribution of direct F2S procurement approaches (Gunter, 2011; Gunter & Thilmany, 2012; Haynes, 2010; Tuck et al., 2010), intermediated or regional value chain approaches to F2S have been cited as having the potential to expand the scope and scale of local food procurement by schools (Izumi et al., 2010; Plakias et al., 2020). Limited research has been conducted on the role intermediaries play in aggregating purchases on behalf of a collective of schools and the associated economic benefits of their participation. Conner et al.'s (2011) analysis of a Minnesota school district's centralized meal preparation facility is one of the few known studies to examine local food purchases within an intermediated F2S model. The research examined fruit and vegetable purchases made through a regional distributor on behalf of all 56 schools in the district over a 4-month period. The researchers found that 40% of all produce (14 items with a total value of \$130,000 USD) came from six growers within a 100-mile radius. Furthermore, data on schools' local food purchases continue to be limited. The 2019 US F2S Census found that 54% of school food authorities reported that their local food expenditures were estimated rather than based on financial records or receipts, and 10% of school food authorities did not provide any useable expenditure data (Bobronnikov et al., 2021). Accordingly, there is a need for further investigation into the economic activity associated with intermediated F2S models, i.e., the "dollars spent within region that are attributable to a given industry, event, or policy" as defined by Watson et al., 2007 (p. 17).

A focused analysis of schools' local food expenditures based on primary data sources could yield a clearer view of the economic potential for F2S activity. Insights into the ways and degree to which strategically scaled-up local food sourcing through intermediated F2S programming can create value both within local farm and food systems and the wider agri-food sector could help build the case for further public investment in school food programming while also potentially addressing some of the inherent challenges in decentralized school food programs (SFPs) and F2S models. Recently, in the Canadian context, there has arisen growing interest and momentum in understanding better the ways in which public policy and programming in the realm of school food can produce both focused outcomes for children's nutritional health and more broadly distributed ancillary benefits in other sectors. In 2022, after many years of advocacy on the part of nongovernment bodies, local-level actors, and families across Canada, the Government of Canada committed to developing a National School Food Policy (Government of Canada, 2022, para. 2), following their 2019 commitment to "work with the provinces and territories towards the creation of a National School Food Program" (Government of Canada, 2019, p. 163) or those working within the realm of school food and children's dietary health, the earmarking of dedicated national-level public funding was a long-awaited development—one that has led to increasingly active deliberations on the design features of SFPs and the assessment of various delivery models.

In this article, we explore the nature and potential performance of one form of scaled-up school food procurement model relative to the longstanding practice of decentralized, independent SFP procurement in Ontario, Canada, and assess its potential to grow the school food market opportunity for local and regional food producers. We adopt both a descriptive and quantitative approach to examine school food procurement intermediated by non-profit organizations (NPOs) compared to the traditionally decentralized, volunteer-led SFP model and bring attention to the attendant opportunities for the provincial agri-food sector. The former serves to provide some appreciation of the nature and institutional complexity of SFPs in Ontario and to consider challenges and potentialities associated with both direct source SFPs and the emerging NPO-intermediated F2S approaches, with emphasis on the latter. In the latter portion of the paper, we present an empirical analysis undertaken to examine, at least provisionally, the comparative performance of the two models with respect to total purchases, the proportion of total purchases featuring Ontario-grown products, and finally, an estimation of the proportion of total food purchases that notionally could have been sourced from within the province.

The paper is organized as follows. First, we provide a descriptive characterization of the Ontario school food landscape to set some context for the case examples and analysis, both geographically and institutionally. As is not uncommon, at least not in the Canadian context, it is characterized by significant complexity in form(s), sources of support, the scale of undertaking and stability over time (Ruetz & McKenna, 2021). Some understanding of the governance structure and delegation of responsibilities is important for digesting the case examples presented. In short, we try to capture how school food programming has long ‘worked’ in the province. We then turn to the empirical analysis, where methods and data are briefly described, and results are reported pertaining to the types, volume and dollar value of food procured in three case examples. In addition, an attempt is made to estimate the potential for the replacement of imported food products with locally sourced items. The paper concludes with some reflection on the implications of the findings for current and potential future SFP design and execution, and on the wider conceptualization of F2S approaches in the delivery of centrally coordinated SFPs.

## **2.0 Growing Farm to School: Current Status and Emerging Opportunity**

In contrast to the United States, where millions of school lunches are offered at reduced or no cost via the National School Lunch Program, the majority (72.8%) of elementary and secondary school students in Canada bring a packed lunch (Tugault-Lafleur et al., 2018). Instead, free breakfast, snack, and to a lesser degree, lunch programs mostly run by volunteers were offered in approximately 35% of elementary and secondary schools across Canada, which served roughly 1/5 of JK-12 students in 2018/19 (Ruetz & McKenna, 2021). While all provinces and territories feature some form of a SFP, the type of meals and quality of food served varies across the country. The lack of appropriate food preparation infrastructure in schools (Haines & Ruetz, 2020) and a predominately volunteer-dependent operational model (Ruetz & McKenna, 2021) constrains the potential economic impact of F2S approaches to school food procurement. These voluntary SFPs, largely started and run by volunteers dating back to the 1990s, rely primarily on charitable funding, with varying amounts of supplemental funding coming from provincial, large municipal governments and the sporadic involvement of the Public

Health Agency of Canada (Farm to Cafeteria Canada, 2020). In the absence of a coordinated and mandated national school food program, SFPs have largely fallen under the mandate of provincial governments, given their constitutional responsibility for health care and education writ large, to date (Ruetz, 2022; Trudeau, 2021b, 2021a).

Ontario, like most Canadian provinces and territories, has no uniform and comprehensively funded SFP. Although free SFPs (breakfast, snack, and occasionally lunch) operated independently by volunteers in JK-12 schools are prevalent, operating in the majority of schools, such programs are diverse in scale, form, and purpose and result in a complex and fragmented school food landscape in the province. The main province-wide SFP, the Ontario Student Nutrition Program (OSNP), is coordinated by regionally dispersed NGOs that support the operation of volunteer-run SFPs in the vast majority of schools in the province. The stated goal of the program is to “support learning and healthy development” (Government of Ontario, 2023, para., 2). The Ontario Ministry of Children, Communities, and Social Services funds up to 15% of program costs, which equates to between 12–15 cents per meal or snack served (Ontario Student Nutrition Program – Southwest Region, 2019). The First Nations Student Nutrition Program (FN SNP), the smallest of the three SFPs in the province, is fully-funded by the same ministry as the OSNP. In contrast to the OSNP, the First Nations program allows program funds to be used towards “staff (part-time/full-time) and/or honorariums for staff” (Government of Ontario, 2016, p. 3).<sup>1</sup> Within the third SFP, the Northern Fruit and Vegetable Program (NFVP), the cost of the fruit and vegetables and their delivery is fully funded by the Ontario Ministry of Health but the food is prepared by volunteers. The NFVP is the second largest program in terms of geographic and programmatic coverage, but it only runs for 20 weeks (January to June). The Ontario Ministry of Health characterizes it as “an initiative that promotes awareness and increases consumption of fruits and vegetables” among school-age children in Northern Ontario, including First Nations communities (Government of Ontario, 2006). Most schools participating in this voluntary health-promotion program use fruits and vegetables to supplement their existing SFP, which is only partially funded by the Ontario Ministry of Children, Community and Social Services. Published mandates for all three programs give prominence to providing nutritious food to students to support their learning and healthy development, with the NFVP noted specifically as a food literacy program.

Within these programs, local food procurement is not an official mandate; however, government funders recognize the potential role SFPs could play in purchasing locally. As defined by Ontario’s Local Food Act, local food for the context of this research was defined as “food produced or harvested in Ontario, including forest or freshwater food” (Bill 36, 2013, p. 2). In the province-wide OSNP, the government funder encourages programs to “choose foods that are in season and produced locally” to “help reduce carbon emissions produced during transportation” and because “in-season produce is usually cheaper, providing an added benefit to [programs]” (Ontario Ministry of Children Community and Social Services, 2020, p. 21). In the First Nations Student Nutrition Program, the province encourages programs to “give parents, Elders and other community members the opportunity to identify foods (including traditional and local foods) that can be included in the

---

<sup>1</sup> The extent to which government funding is used for this purpose (if funding not used towards food is left over) is unclear.

program” to ensure that health promotion is accompanied by the recognition of tradition, culture and identity (Government of Ontario, 2016, p. 8). In the NFVP, while the Ontario Ministry of Agriculture, Food, and Rural Affairs supported the initial development, the provincial Ministry of Health has always been the sole government funder and has not explicitly noted local food purchasing as a goal of the program. Nevertheless, the Ministry of Health has subcontracted the Ontario Fruit and Vegetable Growers Association since 2006 to centrally coordinate the purchase and delivery of the food, a significant portion being Ontario-grown, which has proven to be a significant collaboration that has bridged the health and agricultural sector.

As depicted above, there is significant variability regarding the ‘players’ and the purpose of SFPs in Ontario. The dominant approach to school food programming in the province—where approximately 56,000 volunteers (Student Nutrition Ontario, 2018) purchase, prepare, and serve food independently for their school—could be defined as a decentralized, under-funded, and volunteer-driven model, reliant on non-governmental partnerships for funding and implementation of SFPs. This approach presents several challenges to the efficient and ongoing operation of SFPs, including exposing programs to fluctuating and costly retail food prices that limit access to local or a wider range of fresh foods due to limited program budgets.

In response to these challenges with the decentralized OSNP model, the Government of Ontario began funding non-profit organizations (NPOs) to “support more efficient food purchasing, distribution and storage as well as sourcing local food” (Government of Ontario, 2014). In 2013, the NPO coordinating the Ontario Student Nutrition Program received government funding to hire 14 food procurement staff positions across the province to assist with centralized bulk food purchasing for SFPs. The deployment of these positions spawned several regionally coordinated programs, one of which serves as a case example in the empirical analysis, in partnerships with regional food distribution intermediaries who help aggregate school food purchases. This NPO intermediated approach—one that makes a concerted effort to purchase local food—has resulted in a significant portion of Ontario-grown fruit and vegetables being consumed by students, a result that suggests wider health and (agricultural) economic benefits (Bagdonis et al., 2009). While intermediaries have been found to play an important role in the execution of this ‘farm-to-school’ (F2S) approach to school food procurement (Izumi et al., 2010), limited research has been conducted on the economic activity contributed by intermediated F2S program implementation models in the United States (Conner et al., 2011; Conner et al., 2012; Watson et al., 2018), and is yet to be examined in Canada.

On the food producer side, the SFP opportunity at hand is enticing in principle, to say the least, but perhaps somewhat underappreciated for its revenue generating performance, current and potential future, in support of rural communities and the agri-food sector. For example, in Ontario, in the 2018/19 budget year, some \$27.9 million (CAD) was directed by the Provincial Government to the Ontario Student Nutrition Program (OSNP), which provides partial funding via annual grants to schools that qualify via intermediating NPOs (Ruetz & McKenna, 2021). On a per-school basis, however, the maximum amount that is to be supported by this provincial funding is “up to 15% of program costs” (Ontario Ministry of Children and Youth Services, 2018, p.13), leaving the bulk of the fundraising effort (85%) to philanthropic groups, service organizations and communities at large.



Based on this 85:15 ratio and some admittedly simple extrapolation, the OSNP-related school food market in the 2018/19 school year, combining both public funding and the funds generated otherwise, had a potential value of approximately \$186 million (CAD). When combined with documented expenditures for the two additional fully funded SFPs noted above, the total spent on these large-scale programs reached approximately \$195.7 million in the 2018/19 school year. While the calculation is an approximation, the documented public sector contribution and the associated funding ratio for SFPs are real. Leaving aside the potential expansion of SFPs associated with the development of a national program, even at current levels, SFPs represent a large potential market for locally or regionally produced food—a market with the potential to create new revenue for producers, better meet the quality requirements of school food purchasers; and create new partnerships, both economic and social, between farms, communities, and schools.

### **3.0 Data, Methods, and Case Profiles**

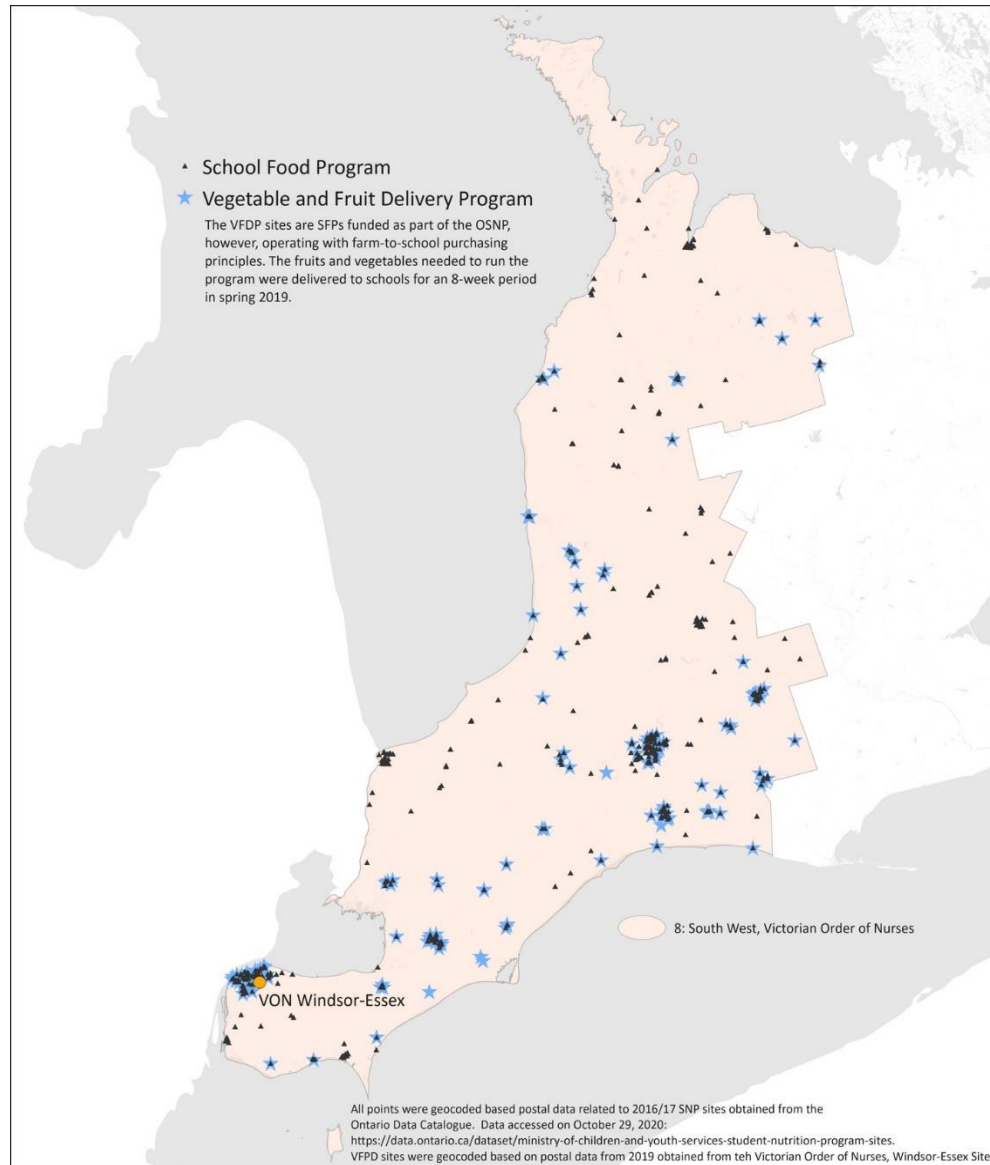
Informed by previous research and the past involvement of the first author in the OSNP, the research used a mixed-methods approach to first discern and characterize the operational features of the selected intermediated programs, and, secondly, quantify the economic activity associated with local fruit and vegetable purchases via these intermediated F2S programs. Mixed-methods and case study-research offer unique methodological advantages for researchers wanting to examine complex issues (Plano Clark et al., 2018). As such, a mixed-methods case study design was chosen to generate an in-depth understanding from unique cases for comparative analysis (Creswell & Plano Clark, 2017).

Two large-scale intermediated programs operating in geographically distinct areas of the province were selected for this study. The Vegetable and Fruit Delivery Program (VFDP), a regionally-based SFP created under the auspices of the OSNP and located in the agricultural heartland of southwestern Ontario, and the afore-described Northern Fruit and Vegetable Program (NFVP) feature both similarities and significant distinctions. Both the VFDP and NFVP (1) provided vegetables and fruits, a portion of which were known to be Ontario-grown, and (2) offered the same number of servings over the course of the program. However, the programs are distinct from one another in (1) location (more urbanized Southwestern Ontario versus more remote Northern Ontario); (2) funding structures (partially versus fully government funded); and (3) participation rates (partial student population participation versus the entire school population). The project differs from several F2S-related economic analyses in both scale and method. Regarding scale, the analysis is among a small number of studies that have looked at primary procurement data and food commodity choices. It focuses on a large data set of 611 schools within two large geographical regions: a 9-county region in Southwestern Ontario and an 8-district region in Northern Ontario.

The Vegetable and Fruit Delivery Program (VFDP), which is part of the OSNP, was selected because it stands as one of the largest regionally intermediated procurement initiatives in the province. Since 2017, the Victorian Order of Nurses (VON) branch servicing the City of Windsor and Essex County has operated the VFDP, which coordinates the purchase and delivery of five servings of fruits and vegetables per week for eight weeks from March until May for participating schools. Since its creation, the VFDP has experienced year-over-year growth. In 2019, 162 schools across Essex, Kent, Elgin, Middlesex, Oxford, Grey, Bruce, Huron, and Perth

counties in Southwestern Ontario participated in this program—roughly one-third (35.6%) of all SFPs in the VON’s region<sup>2</sup> (see Figure 1).

Figure 1. The Vegetable and Fruit Delivery Program in Southwestern Ontario.



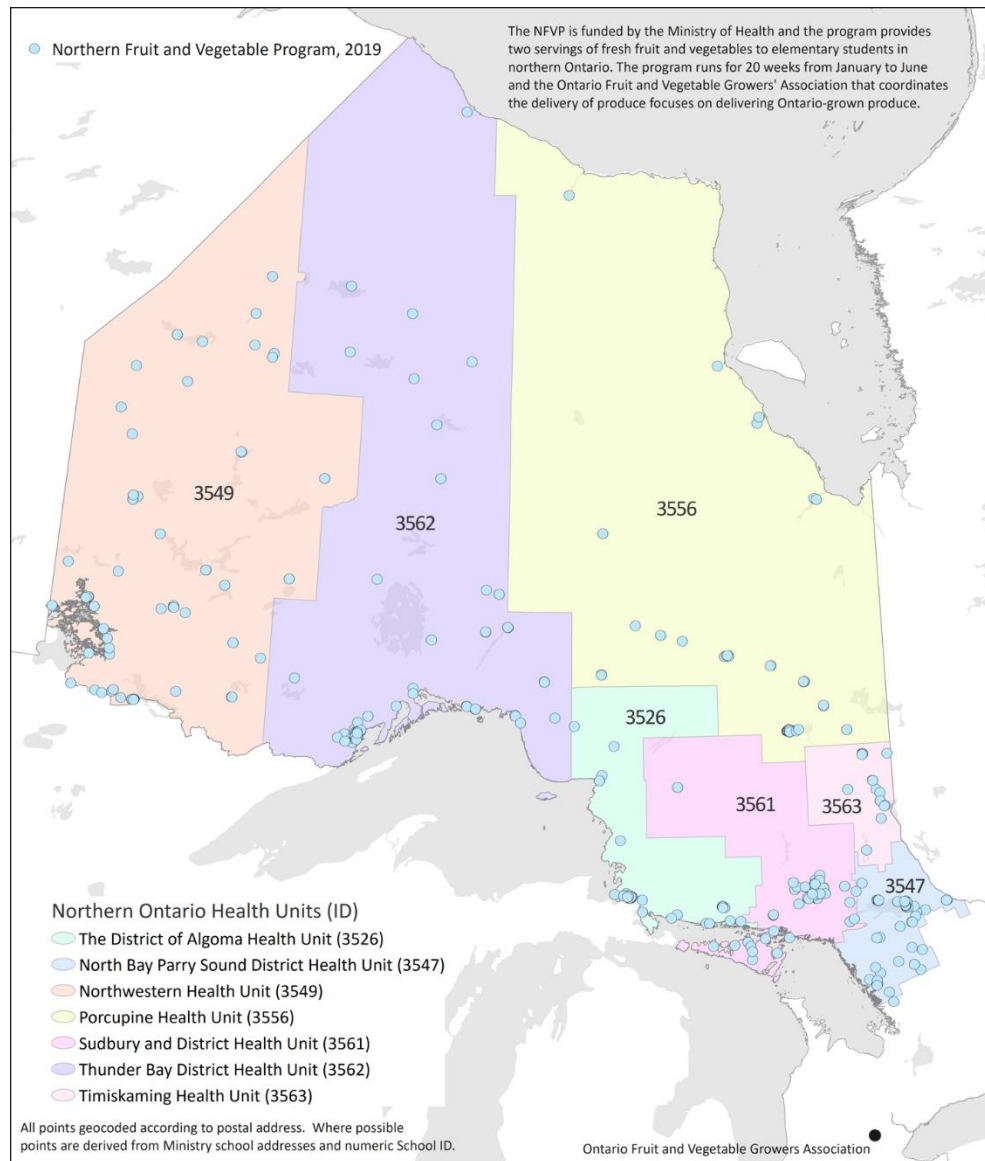
Source: Bonnycastle, A., 2022, Department of Geography, University of Guelph.

The second selected program is the NFVP, which provides two servings of fresh fruit or vegetables per week for 20 weeks to students in Northern Ontario. The NFVP runs from January to June because that is the most difficult time for schools in the region to obtain fresh fruits and vegetables, including Ontario-grown products, at an affordable cost. The NFVP, funded since 2006, is an “initiative that promotes awareness and increases consumption of fruits and vegetables” in remote regions, including First Nations communities (Government of Ontario, 2006, page number

<sup>2</sup> In 2018/19, there were 455 SFPs in the VON’s region.

not available). The Ontario Fruit and Vegetable Growers Association coordinates the purchase and delivery of food centrally and coordinates its distribution among several supply chain partners (road and air), as a significant number of schools are in remote, fly-in-only communities. Starting with 32 schools in Northeastern Ontario, by 2019, the NFVP served 82,612 students in 449 schools across Northern Ontario, a region that also spans the geographical catchment of seven health units, who also assist with the program (see Figure 2).

Figure 2. Northern Fruit and Vegetable Program (NFVP).



Source: Bonnycastle, A., 2022, Department of Geography, University of Guelph.

While the NFVP program delivered two servings of fruits and vegetables per week for 20 weeks and the VFDP delivered five servings of fruits and vegetables for eight weeks, they each served a total of 40 servings of fruits and vegetables, a similarity that provides a useful basis for combinatorial purposes and comparative analysis.

In addition to these two centralized programs, three individual school-level SFPs<sup>3</sup> in Central Ontario (located in the communities of Oakville, Orangeville, and Harriston)—were recruited as, not so much formal ‘case comparators’ but rather as exemplars of the OSNP’s predominately decentralized procurement model. For purposes of analysis, data derived from these school-level programs were collected and used as a provisional reference point for two reasons. First, to avoid overestimating the purchasing power of the intermediated programs, we focused on the relative amount of local produce already accessible to schools through community grocers. Second, we sought, to the extent possible, to contrast the practice and performance of the long-prevailing SFP procurement model in the province. An initial desire for a larger sample of individual schools was curtailed by, first, difficulty in recruiting given the data collection demands, and subsequently, the arrival of the Covid-19 pandemic, which led to school closures and remote learning. Hence, no suggestion is made that the selected schools are definitively representative of Ontario elementary schools, but they do exhibit those features in scale, governance, and SFP activities commonly practiced and highly familiar within the province.

Quantitative data for the analysis were distilled from primary purchasing invoices from the two regional programs and the decentralized direct procurement exemplars. These data were supplemented by insights gained from (1) key informant interviews with the NPO Program Managers for the two regional programs and the three SFP volunteers running the independent SFPs, (2) a web-based search of content and policy, and (3) planning documents concerning the organizations and information provided by the organizations themselves about their food procurement practices. The central purpose of the interviews was twofold; first, to assist in understanding and characterizing the ‘mode of operation’ for programs (especially given the potential for a web of food sourcing and transportation arrangements) and second, to identify the bases for, and constraints on, current and planned procurement practices.

Invoices from the two intermediated programs, which spanned 11 food distribution intermediaries were collected while the program was running, between January and June 2019. Aided by the lead researcher’s former employment status in the Ontario school food sector, access was provided to primary data from centralized record holders, thus affording a high-degree accuracy of insight into the quantity, range and origin of food products procured. Primary purchasing data included the name of the product purchased, the quantity of the product purchased (unit), the price per unit, the total dollar amount of the product delivered, and the cost of delivery. Based on these data, it was possible to (1) tally the total expenditures by program into Microsoft Office Excel 2016; (2) verify the origin of the product with the NPO program managers as this information was not always listed on the invoices; and (3) analyze the data regarding the total funds spent on fruit and vegetables overall, local horticultural products, and food distribution.

---

<sup>3</sup> The sample size for the individual, decentralized SFPs turned out to be smaller than was intended—initially because of a modest uptake during the initial recruiting effort, and then subsequently by the arrival of the Covid-19 pandemic which effectively foreclosed opportunities to circle back and add participants. Indeed, even if a larger cohort of 10–15 decentralized SFPs was acquired, the data still would have only offered limited insight due to the constrained sample; but no less was able to offer some contextual insights. The decentralized SFPs provided a window of insight into the challenges associated with the predominant SFP model in Ontario, the contextual impetus for the emergence of the NPO-intermediated model.

The manager of each regional SFP (n=2) was interviewed in the fall of 2018 and again in the summer of 2019. Interviews lasted approximately 60 minutes and consisted of questions about the Ontario school food landscape and details of the programs, such as how and why the programs started, how they operated, and challenges and opportunities for expanding the reach or the range of food products in the program.

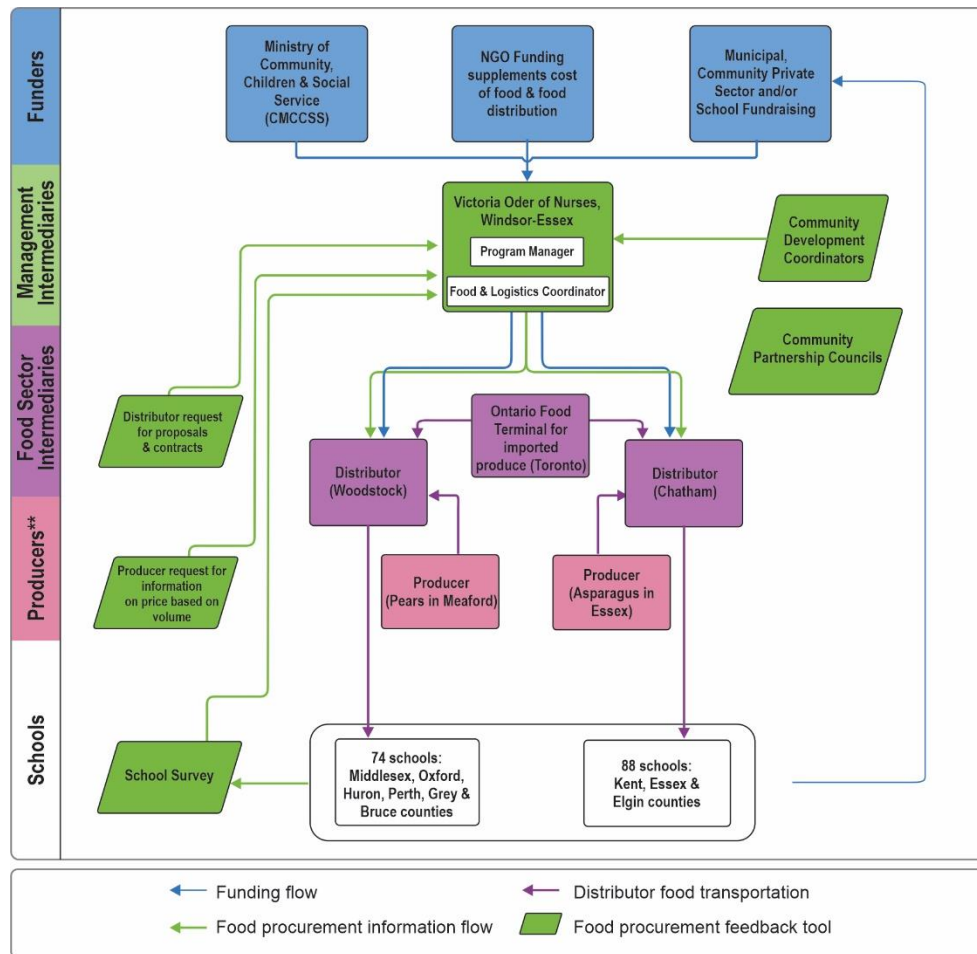
For the three direct procurement programs, the SFP coordinators (n=3) at the individual schools were interviewed in the fall of 2018 and again in the spring of 2019, and food tracking procedures, i.e., grocery store receipts, were collected to capture data for eight weeks from March until May during 2019 (the same time period as the VFDP). Similarly, these purchasing records were organized using Microsoft Office Excel 2016 to facilitate comparisons. As noted above, these three schools are a reference point and serve as a contrast to assist in the interpretation of findings from the intermediated and aggregated programs. As was done with the food program coordinators, interviews with school-level personnel were recorded and transcribed to minimize note-taking and facilitate a conversational approach in the interviews, to ensure accuracy in the recall and characterization of responses, and to identify areas where re-engagement was needed.

#### **4.0 Intermediated Program Profiles**

The appointment of 14 regional food and logistics coordinators noted earlier led to the emergence of more regionally focused bulk food procurement initiatives in the province, including partnerships with public-sector group purchasing organizations, local food hubs, and securing in-kind food donations and food delivery from food manufacturers (Lapalme, 2016). The VON's Vegetable and Fruit Delivery Program (VFDP) is now one of the largest and most comprehensive of the food and logistics coordinators' initiatives in the province, with year-over-year growth since its creation. In the VFDP, purchases were coordinated by the Food and Logistics Coordinator at the VON in Windsor, who subcontracted the purchasing and delivery of food to two regional distributors (see Figure 3). The program was served by two distributors. The first, based in the Southwestern Ontario city of Chatham, delivered fruits and vegetables to 88 schools across Essex, Kent, and Elgin counties; and the second partner, based out of the city of Woodstock, delivered fruits and vegetables to 74 schools across Middlesex, Oxford, Grey, Bruce, Huron, and Perth counties. Examples of local producers are shown in Figure 3.

The Northern Fruit and Vegetable Program (NFVP), the second SFP featured in our analysis, reflects a different administrative and funding reality. In the NFVP, a program manager at the Ontario Fruit and Vegetable Growers Association coordinated ten regional distributors based in central and northern Ontario to deliver products along six distribution routes (see Figure 4). All distributors sourced a combination of locally grown (examples of local producers in Figure 4) and imported food products due to cost and seasonality constraints and aimed to satisfy student preferences and introduce students to less familiar (for them) food products, the latter being one of the stated goals of the program, e.g., domestic and imported fruit and vegetables).

Figure 3. VFDP’s intermediated supply chain.



Source: Ruetz, A.

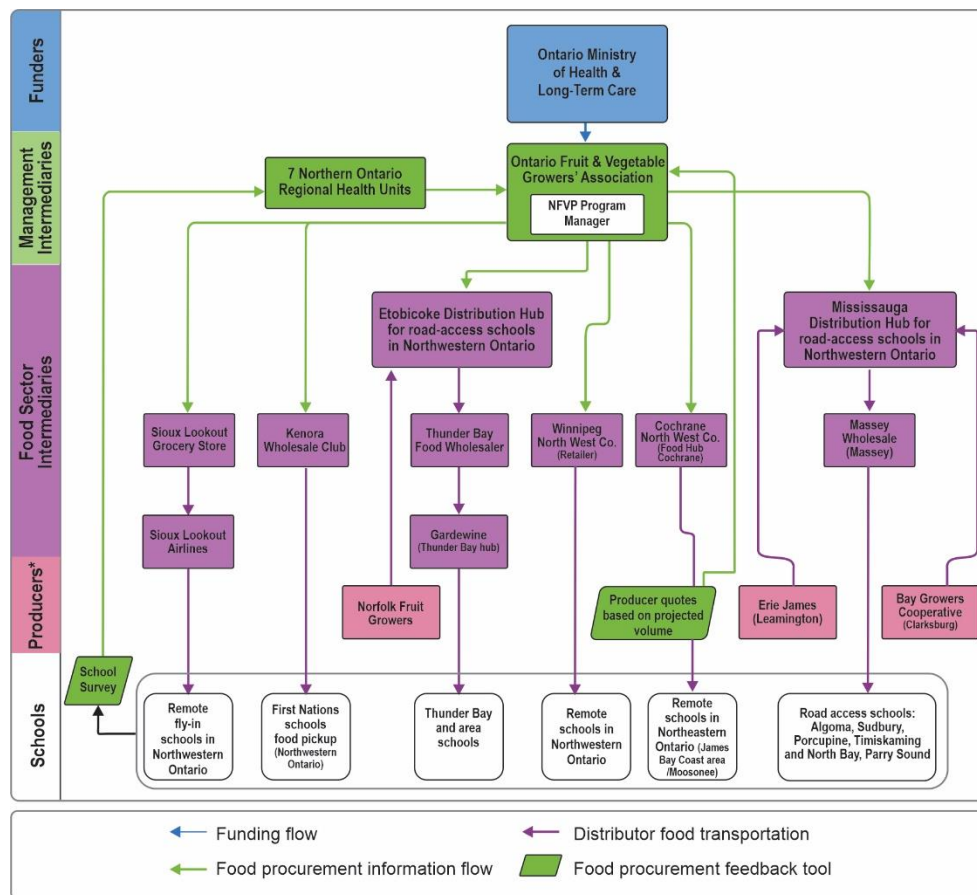
As illustrated in Figures 3 and 4, the NPO-intermediated F2S model in Ontario can be described as utilizing a *less direct* channel (1 to 2 intermediaries between farms and schools) as opposed to the complexity and reach of true broadline distributors (3 or more intermediaries)—a distinction advanced by Plakias et al. (2020). Both programs utilized school surveys to collect information regarding food preferences to inform menu planning and quotes or requests for information from prospective growers to approve and pass on to the subcontracted regional distribution partners.

Operationally, the regional programs are similar in that they are both overseen by an NPO program manager responsible for aggregating purchases on behalf of their respective schools. The fruits and vegetables were procured through the subcontracting of regional food distribution businesses by the respective NPO program managers. Both NPO managers utilized pre-set menus to predict the volumes required so a more competitive price could be negotiated, including on Ontario-grown products.

While the two intermediated F2S programs reflect a similar approach or implementation model, they operate under starkly different funding arrangements and geographical boundaries—both of which strongly influence how they are executed.

For schools participating in the year-round OSNP—including the 8-week VFDP coordinated by the VON—government funding, as noted previously, is limited to “up to 15% of the program costs” (Ontario Ministry of Children and Youth Services, 2018, p. 13) and these funds are restricted to food and limited supplies and are not to be used for food transportation or food literacy activities. These SFPs, and the VFDP, in particular, are made possible through additional non-governmental funding to cover the remaining cost of food and distribution. The NFVP, however, receives 100% of the funding to cover the cost of food for the entire school population, food transportation and food literacy activities from the Ontario Ministry of Health.

Figure 4. NFVP’s intermediated supply chain.



Source: Ruetz, A.

## 5.0 Results

Turning to the food procurement data, fruit and vegetable purchases during the 2019 winter and spring terms were analyzed to reveal the dollar value of total purchases, the proportion of total purchases featuring Ontario-grown products, and finally, an estimation of the proportion of total food purchases that notionally could have been sourced from within the province. This final step draws on the Government of Ontario’s ‘Foodland Ontario Seasonal Food Availability Guide’ and allows for at least a provisional estimation of future product purchasing opportunities that could augment local food procurement.



### 5.1 Local Purchases

A key aspect of the research was to ascertain the proportion of school food purchases that were Ontario-grown as an indicator of the current capture of the school food ‘market’ in the province and as a starting point for estimating the potential for replacement of non-Ontario products with more local and regionally sourced foods. Data from purchasing records from January to June 2019 were used to determine the types of products purchased, the total dollar amount of the product delivered, and the delivery cost.

In the VFDP, as part of the program’s *Tasty Ontario Tuesday* initiative that promised at least one locally sourced fruit or vegetable per week (20%), \$143,319 (CAD) of the total \$362,263 budget (40%) was spent on Ontario-grown products (see Table 1). In addition to the funds spent on food, a rate ranging from \$5.00 to \$12.50 was charged by the distribution partners per school delivery. Over the eight weeks of the program, the total revenue shared between the two southwestern regional food distribution intermediaries was \$13,040 (see Table 1).

In the fully funded NFVP, \$699,844 of the total \$1,939,679 budget was spent on Ontario-grown products, equating to 36.1% Ontario products (see Table 1). Distributors servicing this geographically expansive initiative were able to procure widely differing amounts of local food products, ranging from 42.4% to effectively 0% across ten distributors (data not shown). Three distributors that, in part, accessed the Toronto Food Terminal—a central collection and distribution point for both imported and domestic products—to supply schools in Northeastern Ontario (i.e., the James Bay coast, Sudbury, Thunder Bay, and the surrounding regions) were able to procure a higher portion of Ontario-grown products: an average of 41.5% Ontario grown product (\$695,364 of \$1,674,927)). Among the remaining seven distributors that served more remote areas of Northwestern Ontario, including fly-in communities in the far north, only 1.7% of the products procured were Ontario-grown. While the amount of Ontario-grown product was low for these six distributors, 19.7% of the total foods procured were reported to be sourced from Manitoba (MB), Ontario’s provincial neighbour to the west. Correspondence with the NPO manager revealed that Northwestern Ontario’s supply chains are more developed with Manitoba as the distribution hubs are closer to Winnipeg (MB) than Toronto (ON).

As noted earlier, data were also collected across a small sample of three individual SFPs in South Central Ontario. Among the three decentralized SFPs, the portion of Ontario-grown horticultural commodities procured from local grocers ranged from 15% to 21% (see Table 1), with an average of 19% of Ontario products. The \$622 of local products collectively purchased by the three schools (n=840 students) equates to \$0.79 per student over eight weeks in the decentralized model.

In contrast, the \$843,163 of Ontario-grown fruits and vegetables procured on behalf of the 611 schools (n=122,612 students) in the intermediated model equates to an average of \$6.88 per student (\$3.58 per student in the VFDP and \$8.47 in the NFVP respectively) or an average of 37% local food (40% of purchases in the VFDP and 36% of purchases in the NFVP).



Table 1. *Program Expenditures by Program Model*

<b>Int. program school</b>	<b>Duration</b>	<b>Schools</b>	<b>Students served</b>	<b>Total fruit &amp; veg. value</b>	<b>Total \$ value Ont. food</b>	<b>Ont. product as % of total spend</b>	<b>\$value Ont. food per student</b>
VFDP	8 weeks	162	40,000	\$362,263	\$143,319	40%	\$3.58
NFVP	20 weeks	449	82,612	\$1,939,679	\$699,844	36%	\$8.47
Intermed. programs total		611	122,612	\$2,301,942	\$843,163	37%	\$6.88
Wellington County School	Sample of food purchases over school year –	1	480	\$1,391	\$286	21%	\$0.60
Dufferin County School		1	240 s	\$1,250	\$244	20%	\$1.02
Halton Region School	8 weeks	1	120 s	\$855	\$132	15%	\$1.10
Independent school totals		3	840 s	\$3,496	\$662	19%	\$0.79

## 5.2 *Top Locally-grown Products Sourced*

The top seven Ontario-grown products purchased in the two regional programs in intermediated model included (in descending order) mini cucumbers, peppers, apples, cherry/grape tomatoes, mini carrots, pears, and asparagus (see Table 2). The range of products in the intermediated programs was similar, with an emphasis on low-prep products.

Interviews with the NPO managers revealed these single-serve items were among the most popular among program coordinators as most schools in Ontario—particularly elementary schools—have limited or no dedicated kitchen space and eating areas. One product that was a unique feature of the NFVP was apple chips, a lightly processed and non-perishable product that was chosen as it transports well to remote communities. Overall, the absence of a dedicated SFP kitchen and limited seating capacity in cafeterias results in most schools serving food at students’ desks, making this range of ‘wash-and-serve’ or ‘snackable’ single-servings of fruits and vegetables (e.g., baby cucumbers, and cherry tomatoes) that require little preparation popular.

Table 2. *Top Seven Local Food Products Purchased by Regional Case Studies, Combined*

<b>Local product</b>	<b>Total local spend (\$)</b>	<b>% of local purchases</b>
Mini cucumbers	\$236,778	28%
Peppers (mini sweet, red, orange)	\$184,400	22%
Apples	\$167,090	20%
(incl. apple chips, sub-total)	(\$43,736)	(5.2%)
Cherry/grape tomatoes	\$117,222	14%
Mini carrots	\$101,853	12%
Pears	\$33,710	4%
Asparagus	\$2,110	0.3%
<b>Total</b>	<b>\$843,163</b>	<b>100%</b>

### **5.3 Potential for Expansion**

Primary purchasing records were also analyzed for purchases that had the potential to be locally sourced. Using *Foodland Ontario’s Seasonal Food Availability Guide*, the purchasing data was analyzed for products that were in season and thus could conceivably have been sourced from Ontario at the time of purchase. From the purchasing data, a residual value of Ontario-grown horticultural products that could have been captured by these two programs was determined. Based on the Foodland availability guide, with the caveat that other real-time determinants of potential availability are excluded, it was found that five items could have been sourced, or greater amounts of these products could have been sourced, within Ontario if carried by the distributors and the necessary food processing was available. These items included apple sauce, strawberries, pears, mini carrots, and apples, in descending order (see Table 3).

While apples are a notable and significant feature of the Ontario fruit-producing landscape, the NPO managers noted that 100% of the apple sauce had to be sourced from Quebec as Ontario does not have a facility to manufacture single-serve cups. Increasing food processing within Ontario would help supply more minimally processed foods—such as apple sauce—to schools in the province. Strawberries are another product that could have been sourced locally and presents a large opportunity for expansion. The VFDP only purchased imported strawberries on one occasion, which could have been sourced locally, as greenhouses in the province have been growing winter strawberries since 2017. This expansion, however, would require a more robust budget as strawberries are a more expensive product per serving than other fruits and vegetables. Pears also present a significant opportunity to increase the amount of locally grown food, specifically if the programs operated year-round and they procured more pears when in season. Carrots and apples are

largely available year-round in the province, so there is also an opportunity to increase the amount of these items served in the programs.

Within the two regional programs, an additional 30.5% (\$370,797) of Ontario-grown fruits and vegetables could have been sourced from local growers, *ceteris paribus*. Adding this sum (\$370,797) to the recorded local food expenditures during the data collection period (\$843,163) produces a potential value of \$1,213,960. Thus, potentially 53% of the fruits and vegetables across these programs could have been sourced locally if carried by the distributors and the necessary food processing was available, specifically in-province apple processing.

Table 3. *Potential Local Product Purchases*

<b>Product</b>	<b>Total spend</b>	<b>Total local spend</b>	<b>Potential additional ON sales</b>	<b>Potential max increase</b>	<b>Possibility and/or conditions for increase</b>
Apple sauce	\$65,569	\$0	\$65,569	100%	Currently sourced from Quebec; requires an apple sauce processing facility in Ontario
Strawberries	\$8,788	\$0	\$8,788	100%	Only served once within the VFDP. Could be purchased on additional occasions for both programs.
Pears	\$194,653	\$33,710	\$160,943	83%	If the programs ran in the fall, Ontario-grown pears (available Sept – Dec) could have been served.
Mini carrots	\$175,653	\$101,853	\$73,800	42%	Available year-round except for June (end of school year)
Apples	\$228,787	\$167,090	\$61,697	27%	Available year-round except for July (outside of school year)
Asparagus	\$2,110	\$2,110	\$0	0%	Only served once within the VFDP. Could be purchased on additional occasions for both programs during the spring when available locally
Cherry/grape tomatoes	\$117,222	\$117,222	\$0	0%	N/A; available year-round
Mini cucumbers	\$236,778	\$236,778	\$0	0%	N/A; available year-round
Peppers	\$184,400	\$184,400	\$0	0%	N/A; available year-round
<b>Total</b>	<b>\$1,213,960</b>	<b>\$843,163</b>	<b>\$370,797</b>	<b>30.5%</b>	<b>Additional Ontario-grown products could have been sourced</b>

As noted in Table 3, all of the tomatoes, cucumbers, sweet peppers and asparagus served in the programs already come from Ontario; however, asparagus was only served once within the smaller of the two programs. In the future, asparagus could be purchased on additional occasions for both programs during the spring when available locally, presenting another opportunity for increasing locally grown products in schools (figures not projected in Table 3).

Intermediated F2S food procurement also has the potential to create and grow several opportunities for the Ontario food processing sector. As the NFVP manager noted, “this program is also helping to maintain or create jobs in the processing of imported products.” He continued, for example, “cut melons or pineapple or citrus that we might have in the program, that is being processed by Ontario-based companies and creating Ontario jobs and supporting Ontario companies as a result [is beneficial], even if it is not using all Ontario grown products.” Overall, there are considerable economic benefits to engaging with new partners in the traditional SFP landscape, creating new economic opportunities for farm enterprises involved in producing or processing fruit and vegetables in Ontario.

## **6.0 Discussion**

The results prompt a closer examination of the relative features and economic activity (current and potential) associated with school food procurement models and an exploration of the range of advantages and opportunities associated with the NPO intermediated F2S procurement model. The findings also point to ongoing challenges to the Ontario school food sector and suggest additional resources are needed to support the sustainability and expansion of NPO-intermediated F2S models in the province. Finally, and inevitably, the question of whether and how to adopt a F2S approach to SFPs conceived ‘at scale’, such as that explored in this paper, necessitates confronting some consequential choices in program design and delivery. Some of these problematic issues are considered, albeit speculatively, at the end of the section.

### ***6.1 Performance of the NPO-Intermediated F2S Models***

There are some observations to note regarding the relative performance of the two centralized and intermediated food programs, namely the form (i.e., whole versus pre-cut) of the products procured and the provenance of the products as influenced by the geography of the supply chains. In the VFDP, \$3.58 of local food (40% of the total spend) was procured per student over the eight weeks of the program (a total of 40 servings of fruits and vegetables). In contrast, in the NFVP, \$8.47 of local food (36% of the total spend) was procured per student over the 20 weeks of the program (a total of 40 servings of fruits and vegetables). With the VFDP distribution partners located in and servicing schools in southwestern Ontario, the lower distribution and food cost account for the lower price per student. The geographic circumstances of the NFVP—with schools located further away from the Toronto Food Terminal, where few of the program distributor partners had access—had a significant and understandable impact on the higher price or purchase value per student in the northern program.

The form of products (i.e., whole versus pre-cut) procured also influenced the price. Both program managers noted school preferences for low-prep products due to limited volunteer labour or preparation facilities. However, the significant variance in program budgets—one fully government-funded while the other 15% government-funded—influenced options and choices for the form of the products.

Approximately 50% of the NFVP were pre-cut products, which contributed to an increased cost of food distribution and processing compared with the VFDP, which only included product delivery. Due to this lower budget, the VFDP focused their efforts, where affordable, on naturally single-serve products such as mini cucumbers, apples, and cherry tomatoes.

The VON manager shared that the NPO only receives 12 to 14 cents per serving (food only) from government funding. With the help of VON's 'adopt-a-school' program (involving \$1000 donations from local donors), the funding increases to "roughly 25 cents a serving, inclusive of delivery". Based on the data collected on 40 servings delivered via VFDP, the average cost was \$0.23<sup>4</sup> per serving (see Table 4). In comparison, the NFVP—inclusive of food and distribution costs—equates to an average of \$0.81<sup>5</sup> per serving. The NFVP—delivering food to remote locations of the province and subcontracting with local distributors of which there may be less competition—is close to four times the cost per serving of the program in southwestern Ontario. When comparing the average cost per serving of food products alone, this decreases to roughly three times the price per serving (average of \$0.59/serving in NFVP compared to \$0.23/serving in VFDP) (See Table 4). The fact that the VON does not procure pre-cut products, is in closer proximity to the Ontario food terminal, negotiates with two as opposed to nine distributors (i.e., a larger economy of scale), and enjoys the benefit of its two distribution partners not charging a mark-up on the food are some factors that undoubtedly helps account for the lower price.

Table 4. *Cost per Serving*

Name of school/program	Number of students served	Total fruit and vegetable purchases	Average cost per serving (food only)	Revenue for Ontario intermediaries	Average cost per serving (food + delivery)
VFDP (Southwestern Program)	40,000 students	\$362,263	\$0.23	\$13,040	\$0.23
NFVP (Northern Program)	82,612 students	\$1,939,679	\$0.59	\$736,575	\$0.81

As both NPO managers noted, when purchased in aggregate, seasonal local produce can be just as affordable or cheaper than imported produce. Both program managers utilized pre-set menus so they could predict the volumes to negotiate more competitive prices than individual schools. The ability to achieve volume-related savings in food procurement holds the potential to either reduce total program costs or allow for other food product expenditures that might not otherwise be possible. As the VFDP manager noted, the cost savings associated with purchasing the lower-cost Ontario-grown fruits and vegetables permitted purchases of more expensive, imported fruits like mango, starfruit, and pineapple, thereby exposing students to a wider range of products.

<sup>4</sup> VFDP:  $(\$362,263 \text{ food} + \$13,040 \text{ distribution}) / 40,000 \text{ students} = \$9.38 \text{ per student over the 8-week program} / 40 \text{ servings} = \$0.23/\text{serving}$

<sup>5</sup> NFVP:  $(\$1,939,679 \text{ food} + \$736,575 \text{ distribution}) / 82,612 \text{ students} = \$32.40 \text{ student over the 20-week program} / 40 \text{ servings} = \$0.81/\text{serving}$

## **6.2 Opportunities and Advantages of NPO Intermediated F2S Procurement**

In addition to the volume-related savings associated with centralized procurement, two additional advantages related specifically to the NPO-coordinated model were outlined by the NFVP manager:

One advantage is that we're able to keep the costs down because we're a not-for-profit. Our main interest is just to cover our administrative costs to deliver the program. [Second,] we are also able to have full control over the procurement and distribution decisions, as long as they fit within the budget.

By having control over the food procurement and distribution decisions, an additional advantage was the evident capacity of the NPO managers to procure significant amounts of local foods: 37% (\$843,163 of \$2,301,942) of all the fruit and vegetables procured were Ontario-grown. As a point of reference, among the independently operated SFPs, the average portion of local products was 19%. Given the small sample of decentralized SFPs, there is no suggestion that this figure is a definitive revelation; a more concerted comparative analysis of the economic implications of different SFP approaches for both local food producers and those tasked to deliver SFPs with limited resources and multiple objectives would be of value. A 2013 analysis of the economic impact of local food in the Canadian food system, conducted for the Conference Board of Canada (Edge, 2013), offers an additional, though more general, point of reference. Based on an input-output (I/O) analysis—looking at the impact of food expenditure on the supply chain within each province—it was found that 24% of the food produced in Ontario, measured by its economic value, was purchased and consumed in Ontario. Although a more general point of reference as the study focused on the Ontario food economy as a whole, for present purposes, the intermediated school food procurement model exceeded that level by over 50%, while the level of the decentralized schools was 20% under the Ontario average. As noted by Lapalme (2016), individual SFP volunteers do not have the same buying power (i.e., economies of scale), time, nor expertise to effectively manage relationships with farmers and industry partners and obtain the cost savings associated with centralized or intermediated school food procurement.

The differential between decentralized and intermediated school food procurement suggests that the intermediated F2S model was able to purchase higher portions and volumes of locally-grown fruits and vegetables, a finding congruent with Plakias et al. (2020). Plakias et al.'s (2020) analysis of the 2011–2014 American F2S Census Data found that sourcing school food through intermediaries increased the average district's spending on local food by 26%. In this study, and with the caveat concerning the final sample size of the decentralized school in place, there were indeed substantially greater increases in local food procurement may be more likely achieved through intermediated supply chains.

In addition to the revenue streams for local producers, Table 5 summarizes a range of potential advantages related to intermediated school food procurement (Victorian Order of Nurses - Windsor-Essex Site, 2015) with lead author participation at time of completion.

Table 5: *Opportunities and Advantages of Intermediated F2S Procurement*

<b>Element</b>	<b>Opportunities and advantages of intermediated F2S procurement</b>
Administration	Reduces administrative challenges and risks related to reporting and finances.
Volunteer management	Reduces time commitment for school staff and volunteers to shop, track, and report on food purchases.
Purchasing	Stretches food funding by purchasing in bulk from vendors at discount prices based on volume. The cost savings from bulk purchasing can be directed towards purchasing more expensive, unique, and high-quality items that otherwise may not be available to schools, including a greater portion of local food.
Food transportation	Increases food safety and quality by streamlining purchasing and delivery from certified vendors.
Preparing and serving food to students	Opportunity to source pre-chopped (sliced bell peppers) or low-preparation products (cherry tomatoes, mini cucumbers) reduces school-level preparation time. Menus are pre-set in advance so schools and parents can be aware of what is being served and plan accordingly and to predict volumes to negotiate a competitive price, including on Ontario-grown products.
Sustainability and fundraising	Costs savings from bulk purchasing may free up funding for additional schools to receive government funding to open new programs and allow more students within existing programs to participate (programs can operate more days per week and more weeks per year).
Evaluation	Access to aggregated datasets from NPO coordinators creates opportunities for further research and evaluation of student nutrition programs to build evidence to justify additional government investments.
Student outcomes	Creates opportunities for partnerships with other provincial programming to strengthen outcomes for students (food literacy, food skills, curriculum links, leadership, and mental health).

For schools, intermediated food procurement reduces time spent on shopping, tracking, and reporting, allowing volunteers to spend more time with students on food literacy activities such as preparing food with the children. More broadly, intermediated procurement may help to achieve economies of scale and increase standardization of program delivery, and therefore improving program accountability, efficiency, cost savings, and procurement of local food.

### **6.3 A Scaled-up Market Opportunity for Local School Food in Ontario**

The finding that 37% of school food procured through the intermediated F2S model was Ontario-grown in the 2018/19 school year, and the seemingly strong prospect that considerably more could have been procured based on the Foodland Ontario Seasonal Food Availability Guide, suggests the potential benefit, for both schools and food producers, of wider adoption of an NPO-intermediated approach. Together, the 611 schools served by the two intermediated programs examined, represented only 16.8%<sup>6</sup> of all schools that operated SFPs in 2018/19. The NFVP expanded significantly in 2019, and in 2019/20, the VFDP ran for an additional 4 weeks for a total of 12 weeks and signaled their long-term objective is to run for the whole school year—a tangible indication of the potential for accelerated growth and impact. Widespread adoption of this intermediated approach across the whole Ontario Student Nutrition Program offers significant opportunities for Ontario food producers and processors.

To achieve this increased procurement of Ontario-grown fruits and vegetables, however, additional support is required. As Izumi (2010) cautions, “until school food service programs are adequately funded, procurement decisions will be made under conditions of high marketness, and the non-economic values that undergird farm to school programs will be subordinated to the market” (p. 347). While the NFVP and VFDP helped address the challenge of food delivery and decreased the cost of food (marketness) while procuring significant amounts of locally grown foods, further investment, from the public purse or elsewhere, in food purchasing budgets (especially for partially funded programs), staffing, and school food infrastructure would be required. Several groups from education, the healthcare community, academia and the school food sector itself are calling for funding to pay SFP coordinators to support programs (CODE-COMOH Partnership, 2021; Everitt et al., 2020; Haines & Ruetz, 2020; Hernandez et al., 2018), including the Council of Ontario Directors of Education and the Council of Ontario Medical Officers of Health who collectively urged that “additional funding for food, paid school leads and community coordination is essential to ensure long-term and sustainable operations” in their joint report (CODE-COMOH Partnership, 2021, p. 3). Presently, SFP funding from the Ontario Ministry of Communities, Children and Social Services cannot be used to pay school food staff, which poses a challenge to procuring and processing locally grown food and generally sustaining the delivery of SFPs in the province.

Investments in local food infrastructure would also be necessary to sustain and expand F2S efforts in Ontario. Investment in both community-level infrastructure (e.g., food aggregation, processing, and transportation) and school-level infrastructure (e.g., kitchen equipment to increase capacity for food preparation) would make local food procurement significantly more feasible than is currently the case (Christensen et al., 2018). In the Province of Quebec, the Ministry of Agriculture has provided a special fund of \$900,000 for capacity-building projects among primary and secondary schools to support the purchase of provincially grown and produced foods (Government of Quebec, 2020b). Ontario’s Ministry of Agriculture, Food and Rural Affairs could consider a similar strategy to support local

---

<sup>6</sup> The figure of 16.8% was calculated based on 3,433 schools participating in the OSNP, 87 schools participating in the FN SNP, and 119 unique, non-OSNP schools participating in the NFVP: a total of 3,639 schools with SFPs in Ontario.



food infrastructure investments. Federally, the Agriculture and Agri-Food Canada could create a dedicated school food infrastructure fund, akin to the Local Food Infrastructure Fund allocated through the national food policy, to support SFP development and expansion, including the provision of local food (Ruetz, 2023).

The establishment of local food procurement targets for SFPs would also be a positive step in supporting the increase of F2S activity and local economic outcomes in the province. In 2016, the Province of New Brunswick's Department of Agriculture, Aquaculture and Fisheries, in partnership with the Department of Education, was tasked to "evaluate and develop a model for local food procurement in all public schools, aiming for a medium-to-long-term target of 30% local food" (Government of New Brunswick, 2016, p. 11). Quebec's Ministry of Agriculture has pursued a similar strategy: all public institutions—including schools—are required to set local food targets by 2025 (Government of Quebec, 2020a). Overall, collaboration across Ontario's Ministry of Agriculture; Ministry of Communities, Children and Social Services (OMCCSS); and Ministry of Health would help bring school food under a common umbrella to create more favourable conditions to support the augmentation of these programs.

Lastly, while the empirical findings on economic activity and our qualitative reading of the current (and potentially soon evolving) SFP landscape in Ontario suggest to us the performance potential of the approach explored for this article, we acknowledge the need for a further and more focused consideration of the complexities of scale in local food initiatives including SFPs with a stated desire to adopt, in whole or in part, a farm-to-school approach. The so-called 'scaling up' dilemma has been addressed by a number of scholars and practitioners in recent years with reference to a wide range of settings from the farm level to commodity groups and broadscale distribution networks and into the food policy and program realm (Clark & Inwood, 2016; Mount & Smithers, 2014; Nost, 2014; Pitt & Jones, 2016).

As has been noted elsewhere, the attempt to scale up local food initiatives has frequently focused, at least initially, on 'hard' infrastructure—material components and procedures such as product selection, mode of procurement, processing infrastructure, storage, and distribution (Bloom & Hinrichs, 2011; Connelly & Beckie, 2016; Stevenson, 2008). Indeed, much of the focus in this paper has been on such considerations. Equally important are the values-based dimensions that underlie the purpose and goals of local food initiatives, influence the ways in which decision-making and governance will occur, serve to create and communicate identity, and inform the 'rules of engagement' that guide and delimit practice. In addition, in the specific context of scaling up, Mount (2012) has invoked notions of flexibility and negotiation as a means of bridging gaps in values and expectations if and where necessary as growth in the scale of operation or spatial diffusion of practice occurs. Indeed, the hybridity that is a now well recognized phenomenon in many local food initiatives is the outcome of such instances of negotiation and accommodation (Mount, 2012).

In the case of regionally focused SNPs seeking to model the broad values and practices of a F2S approach, it's possible to imagine any number of program features (or requirements) and implementation challenges around which contestation might arise and flexibility might be required. Some might be easy to anticipate, others perhaps less so. For example, is there a prototype farmer/producer for SFPs? Should farm-to-school-inspired SFPs engage producers, regardless of size and level of

capitalization? Or as frequently implied in the F2S narrative, should there be targeted recruitment of small and medium-sized producers, often seen as seeking (and needing) new or expanded marketing opportunities outside the primary commercial markets as a means of sustaining a dwindling component of the farm system? Do such small-scale producers have the ability (and inclination) either independently or in concert with others, to commit to the SFP market and meet demand on a sustained basis? And if not, what innovation or infrastructure is needed?

On the school or ‘demand’ side, given the long history of dependence on volunteerism and philanthropy, will SFP budgets be sufficient to accommodate the purchasing of local products, thus more deeply embedding SFPs in their communities and regions, or will longstanding conditions of high marketness continue to prevail with SFPs obliged to bargain hunt? With respect to regulation, what quality assurances and inspection protocols will be employed, and will they be achievable for small and medium-scale producers? Lastly, and importantly, will there be an explicit attempt to develop food procurement models and methods that are differentiated from standard supply chain arrangements such that SFPs create or are part of a value chain approach that is capable of delivering distributed benefits to its members and society? It’s probable that most, if not all, such questions will defy simple interpretation or rigid adjudication—instead they suggest the complexity of balancing multiple goals and the probability of negotiation, accommodation, and hybridity as Mount (2012) suggests.

## **7.0 Conclusion**

The research reported in this article reflects an interest in the so-called upstream side of school food programs—particularly those featuring an NPO-intermediated F2S model. The research sought to make an empirical contribution to a small but growing body of scholarship exploring the degree to which, and the means by which, school food provision and procurement might hold the promise of new or expanded market opportunities for local food producers. In a broader sense, attention to the supply side of SFPs, whether current or potential, expands the notional ‘value proposition’ for public (and private) investment in SFPs where such investment can be seen to offer the prospect of more widely distributed returns on investment beyond children’s nutritional health—in this case in the form of potential opportunity and enhanced returns for producers and processors of local food.

In Ontario, as is the case in several other Canadian provinces, little has been previously documented concerning the nature or potential scale of school food writ large as a potential market for local food, and the extent to which locally produced food products are, or might, be incorporated in SFPs. In this article we sought to gauge the former and to a limited extent document the effectiveness of the latter with respect to both ‘common SFP practice in the province, school-level direct procurement, and two recent manifestations of coordinated or regionally centralized’ practice. While limited in scope given the fragmented, largely idiosyncratic and unevenly funded nature of SFP delivery in Ontario, the hope is that the work offers a timely applied contribution given the announcement of the development of a National School Food Policy and Program, the associated prospect of new public sector investment in school food in Ontario and the resulting creation of a moment for assessment of an expanded range of options for SFP design and implementation.

In response to challenges associated with the direct or decentralized SFP model in Ontario, NPOs, and food distribution intermediaries have become a significant

feature in the province's school food landscape. The results from two intermediated F2S programs provide some indication of the significance of the school food market for Ontario-grown horticultural commodities within JK-12 schools—and suggest that growth in the incorporation of some food products is currently feasible—especially if accompanied by improved capacity in (light) processing and ideal product form (i.e., procurement of single servings of low preparation 'wash-and-serve' or pre-cut fruits and vegetables) for the Ontario school food market. SFP volunteers have benefited from the increased variety of fruits and vegetables and saved time shopping for and preparing food as a result of the centralized NPO-intermediated F2S model. Consistent with the findings from Plakias et al. (2020), the NPO-intermediated F2S model helped schools obtain proportionately more Ontario-grown food than was the case in a small sample of independently operated programs. Given that Ontario's school food market has a potential annual value of approximately \$200 million (\$195.7 million in the 2018/19 school year), there is a large and perhaps not fully appreciated potential market for locally or regionally produced food in the province. One that should attract the interest of food producers, food processors and public sector governance actors alike.

Given the limited literature on school food programs in general and F2S programs in particular in Ontario, the research contributes insights into school-based food programs, the performance of regionally centralized (scaled-up) approaches as an alternative, and the current and potential expanded market for Ontario horticultural commodity procurement by JK—12 schools. Specifically, examining an emerging F2S approach to school food procurement based on aggregated food purchases offered some indication that intermediated models can increase the amount of Ontario-grown food in schools, both currently and prospectively, if aspirations for expansion in school food programming in Ontario are realized in the future.

The results also suggest the valuable role both NPO and regional food intermediaries can play in increasing schools' local food purchasing capacity. The absence of profit-seeking on behalf of the NPO managers who coordinated the intermediated F2S model represents an important distinguishing feature relative to conventional broadline distributors. In addition, the fact that both NPO program managers had previous experience in the food sector and possessed prior experience in the produce industry particularly enabled them to increase the procurement of local foods for SFPs at reasonable prices. Specifically, the two case studies highlighted improved SFP operation (e.g., the ability to deliver food to schools), that achieved economies of scale (motivated by high marketness associated with volunteer-managed SFPs on limited budgets), while sourcing more significant portions of Ontario-grown foods. The results concerning these two NPO-intermediated F2S models suggest a noteworthy opportunity for both schools and food producers if more schools in the province moved to this model. As the VFDP and the NFVP are operating in 16.8% of schools offering SFPs in Ontario in 2018/19, the intermediated F2S model presents a scalable opportunity for accelerated growth and impact for the province. That said, we acknowledge that further comparative research with a significantly larger and more geographically dispersed sample of independent, decentralized, or 'direct-sourcing' programs is needed to confirm or nuance the stability of the findings and their interpretation.

Overall, NPO-intermediated F2S programs can be seen as an opportunity to build regional values-based supply chains that connect local producers, processors, procurement agents, and schools. Importantly, such an approach may hold promise

for ‘scaled-up’ practice that models a values-based approach in its modus operandi and is imbued with the normative qualities of F2S including reciprocity in benefits of participation, the assurance of quality, and the regional identity (and children’s knowledge of that identity) of food products themselves. The degree to which such qualities or characteristics are present or achievable ‘at scale’ represents an enticing question for further exploration.

## Acknowledgments

The authors are grateful for the comments and suggestions of two anonymous reviewers and the research funding provided by the Ontario Ministry of Food, Agriculture and Rural Affairs via the Ontario Agri-Food Innovation Alliance (Grant # UofG 2017-3028 The research was approved by the University of Guelph’s Research Ethics Board (REB#18-07-836).

## References

- Bagdonis, J., Hinrichs, C., & Schafft, K. (2009). The emergence and framing of farm-to-school initiatives: Civic engagement, health and local agriculture. *Agriculture and Human Values*, 26(1–2), 107–119. <https://doi.org/10.1007/s10460-008-9173-6>
- Berkenkamp, J. (2006). *Making the farm/school connection: Opportunities and barriers to greater use of locally-grown produce in public schools*. Part of the Agriculture Commons and the International and Community Nutrition Commons. <https://core.ac.uk/download/pdf/38940841.pdf>
- Bill 36, Local Food Act, session, 2nd sess., 40<sup>th</sup> Leg., Ontario, 2013, c.7. <https://www.ontario.ca/laws/statute/s13007>
- Bloom, J. D., & Hinrichs, C. C. (2011). Informal and formal mechanisms of coordination in hybrid food value chains. *Journal of Agriculture, Food Systems, and Community Development*, 1(4), 143–156. <https://doi.org/10.5304/jafscd.2011.014.016>
- Bobronnikov, E., Prenovitz, S., & Yadav, L.M.B. (2021). 2019 Farm to School Census Report. Prepared by Abt Associates for the U.S. Department of Agriculture Food and Nutrition Service. <https://fns-prod.azureedge.us/sites/default/files/resource-files/2019-Farm-to-School-Census.pdf>
- Christensen, L., Jablonski, B., Stephens, L., & Joshi, A. (2018). Evaluating the economic impacts of farm-to-school procurement: An approach for primary and secondary financial data collection of producers selling to schools. *Journal of Agriculture, Food Systems, and Community Development*, 8(c), 1–22. <https://doi.org/10.5304/jafscd.2019.08C.002>
- Clark, J. K., & Inwood, S. M. (2016). Scaling-up regional fruit and vegetable distribution: potential for adaptive change in the food system. *Agriculture and Human Values*, 33, 503–519. <https://doi.org/10.1007/s10460-015-9618-7>
- CODE-COMOH Partnership. (2021). *Priority and proactive steps to ensure universal access to student nutrition programs*. [https://e7a651fe-6e96-431d-9a6f-a7fa6f71676d.usrfiles.com/ugd/e7a651\\_fb28adc155bd42f69acb72370856d2df.pdf](https://e7a651fe-6e96-431d-9a6f-a7fa6f71676d.usrfiles.com/ugd/e7a651_fb28adc155bd42f69acb72370856d2df.pdf)

- Connelly, S., & Beckie, M. (2016). The dilemma of scaling up local food initiatives: Is social infrastructure the essential ingredient? *Canadian Food Studies/La Revue Canadienne Des Études Sur l'alimentation*, 3(2), 49–69. <https://doi.org/10.15353/cfs-rcea.v3i2.146>
- Conner, D. S., Izumi, B. T., Liquori, T., & Hamm, M. W. (2012). Sustainable school food procurement in large K-12 districts: prospects for value chain partnerships. *Agricultural and Resource Economics Review*, 41(1), 100–113.
- Conner, D. S., Nowak, A., Berkenkamp, J., Feenstra, G. W., Van Soelen Kim, J., Liquori, T., & Hamm, M. W. (2011). Value chains for sustainable procurement in large school districts: Fostering partnerships. *Journal of Agriculture, Food Systems, and Community Development*, 1(4), 55–68. <http://dx.doi.org/10.5304/jafscd.2011.014.005>
- Cresell, J. W., & Plano Clark, V. L. (2017). *Designing & conducting mixed methods research* (Third Edition). Sage Publications.
- Edge, J. (2013, August 20). *Cultivating opportunities: Canada's growing appetite for local food*. Report. The Conference Board of Canada. [https://www.actualitealimentaire.com/wp-content/uploads/2013/08/14-021\\_localfood\\_cfic\\_rpt.pdf](https://www.actualitealimentaire.com/wp-content/uploads/2013/08/14-021_localfood_cfic_rpt.pdf)
- Everitt, T., Engler-Stringer, R., & Martin, W. (2020). Determining promising practices for Canadian school food programs: A scoping review. *Journal of Hunger and Environmental Nutrition*, 17(6), 743–762. <https://doi.org/10.1080/19320248.2020.1823925>
- Farm to Cafeteria Canada. (2020). *Farm to school: Canada digs in!* Report. Farm to Cafeteria Canada. <http://www.farmtocafeteriacanada.ca/f2scdi-report-2020/>
- Feenstra, G., & Hardesty, S. (2016). Values-based supply chains as a strategy for supporting small and mid-scale producers in the United States. *Agriculture*, 6(3), 39. <https://doi.org/10.3390/agriculture6030039>
- Feenstra, G., & Ohmart, J. (2012). The evolution of the school food and farm to school movement in the United States: Connecting childhood health, farms, and communities. *Childhood Obesity*, 8(4), 280–289. <https://doi.org/10.1089/chi.2012.0023>
- Fitzsimmons, J., & O'Hara, J. K. (2019). Market channel procurement strategy and school meal costs in farm-to-school programs. *Agricultural and Resource Economics Review*, 48(3), 388–413. <https://doi.org/10.1017/age.2019.18>
- Government of Canada. (2019, March 19). *Budget 2019: Investing in the Middle Class*. Retrieved from <https://www.budget.canada.ca/2019/docs/plan/budget-2019-en.pdf>
- Government of Canada. (2022, April 7). *Budget 2022: A Plan to Grow Our Economy and Make Life More Affordable*. <https://budget.gc.ca/2022/home-accueil-en.html>
- Government of New Brunswick. Department of Agriculture, Aquaculture, and Fisheries. (2016). *Local food and beverages strategy: Increasing awareness, availability, and support for the New Brunswick food and beverage sector 2016-2018*.

- Government of Ontario. (2006, September 15). *Ontario launches pilot program to deliver fruits and vegetables to children in the north*. Ontario News Room. Retrieved July 7, 2020, from <https://news.ontario.ca/archive/en/2006/09/15/Ontario-Launches-Pilot-Program-To-Deliver-Fruits-And-Vegetables-To-Children-In-T.html>
- Government of Ontario. (2014). *Ontario's local food report: 2014-15 Edition*. Ontario Ministry of Agriculture Food and Rural Affairs. Retrieved September 17, 2020, from [http://www.omafra.gov.on.ca/english/about/local\\_food\\_rpt.htm](http://www.omafra.gov.on.ca/english/about/local_food_rpt.htm)
- Government of Ontario. (2016, March). *First Nations Student Nutrition Program*. Early Child Development Branch.
- Government of Ontario. (2023). *Student Nutrition Program*. <https://www.ontario.ca/page/student-nutrition-program>
- Government of Quebec. (2020a). *Pour une alimentation locale dans les institutions publiques: Stratégie nationale d'achat d'aliments Québécois*. [https://cdn-contenu.quebec.ca/cdn-contenu/adm/min/agriculture-pecherie-alimentation/publications-adm/strategie/PO\\_strategie\\_achat\\_aliments\\_quebecois\\_MAPAQ.pdf](https://cdn-contenu.quebec.ca/cdn-contenu/adm/min/agriculture-pecherie-alimentation/publications-adm/strategie/PO_strategie_achat_aliments_quebecois_MAPAQ.pdf)
- Government of Quebec. (2020, October 2). *Stratégie nationale d'achat d'aliments Québécois*. Quebec Ministry of Agriculture, Fisheries and Food. [www.quebec.ca/gouvernement/politiques-orientations/strategie-nationale-achat-aliments-quebecois](http://www.quebec.ca/gouvernement/politiques-orientations/strategie-nationale-achat-aliments-quebecois)
- Gregoire, M. B., & Strohbahn, C. (2002). Benefits and obstacles to purchasing food from local growers and producers. *Journal of Child Nutrition and Management*, 26(2). <https://core.ac.uk/download/pdf/141669863.pdf>
- Gunter, A. (2011). *Rebuilding local food systems: Marketing and economic implications for communities* (Master's thesis). Retrieved from [https://dspace.library.colostate.edu/bitstream/handle/10217/49814/Gunter\\_colostate\\_0053N\\_10765.pdf](https://dspace.library.colostate.edu/bitstream/handle/10217/49814/Gunter_colostate_0053N_10765.pdf)
- Gunter, A., & Thilmann, D. (2012). Economic implications of farm to school for a rural Colorado community. *Rural Connections*, Winter, 13–16. Retrieved from [https://wrdc.usu.edu/files-ou/publications/pub\\_9857945.pdf](https://wrdc.usu.edu/files-ou/publications/pub_9857945.pdf)
- Haines, J., & Ruetz, A. T. (2020). *Comprehensive, integrated food and nutrition programs in Canadian schools: A healthy and sustainable approach*. [https://arrellfoodinstitute.ca/wp-content/uploads/2020/03/SchoolFoodNutrition\\_Final\\_RS.pdf](https://arrellfoodinstitute.ca/wp-content/uploads/2020/03/SchoolFoodNutrition_Final_RS.pdf)
- Haynes, M. (2010). *Farm-to-school in Central Minnesota - Applied economic analysis*. Report. <https://hdl.handle.net/11299/195481>
- Hernandez, K., Engler-Stringer, R., Kirk, S., Wittman, H., & McNicholl, S. (2018). The case for a Canadian national school food program. *Canadian Food Studies*, 5(3), 208–229. <https://doi.org/10.15353/cfs-rcea.v5i3.260>
- Izumi, B. T., Alaimo, K., & Hamm, M. W. (2010). Farm-to-school programs: Perspectives of school food service professionals. *Journal of Nutrition Education and Behavior*, 42(2), 83–91. <https://doi.org/10.1016/j.jneb.2008.09.003>

- Izumi, B. T., Wynne Wright, D., & Hamm, M. W. (2010). Farm to school programs: Exploring the role of regionally-based food distributors in alternative agrifood networks. *Agriculture and Human Values*, 27(3), 335–350. <https://doi.org/10.1007/s10460-009-9221-x>
- Joshi, A., Azuma, A. M., & Feenstra, G. (2008). Do farm-to-school programs make a difference? findings and future research needs. *Journal of Hunger and Environmental Nutrition*, 3(2–3), 229–246. <https://doi.org/10.1080/19320240802244025>
- Lapalme, H. (2016, February). *Ontario student nutrition programs: Exploring local food group-purchasing frameworks*. [http://www.sjhs-gpo.ca/sites/default/files/website\\_files/OSNP%20Group%20Purchasing%20Exploration\\_Feb2016\\_WEB.pdf](http://www.sjhs-gpo.ca/sites/default/files/website_files/OSNP%20Group%20Purchasing%20Exploration_Feb2016_WEB.pdf)
- Matts, C., Conner, D. S., Fisher, C., Tyler, S., & Hamm, M. W. (2016). Farmer perspectives of farm to institution in Michigan: 2012 Survey results of vegetable farmers. *Renewable Agriculture and Food Systems*, 31(1), 60–71. <https://doi.org/10.1017/S1742170514000465>
- Mount, P. (2012). Growing local food: Scale and local food systems governance. *Agriculture and Human Values*, 29(1), 107–121. <https://doi.org/10.1007/s10460-011-9331-0>
- Mount, P., & Smithers, J. (2014). The conventionalization of local food: Farm reflections on local, alternative beef marketing groups. *Journal of Agriculture, Food Systems, and Community Development*, 4(3), 101–119. <https://doi.org/10.5304/jafscd.2014.043.002>
- Noonan, K., Miller, D., Sell, K., & Rubin, D. (2013). A procurement-based pathway for promoting public health: Innovative purchasing approaches for state and local government agencies. *Journal of Public Health Policy*, 34(4), 528–537. <https://doi.org/10.1057/jphp.2013.30>
- Nost, E. (2014). Scaling-up local foods: Commodity practice in community supported agriculture (CSA). *Journal of Rural Studies*, 34, 152–160. <https://doi.org/10.1016/j.jrurstud.2014.01.001>
- Ontario Ministry of Children and Youth Services. (2018). *Ontario's Student Nutrition Program Nutrition Guidelines*.
- Ontario Ministry of Children Community and Social Services. (2020). *Student Nutrition Program Nutrition Guidelines, 2020*. <https://files.ontario.ca/mccss-2020-student-nutrition-program-guidelines-en-2021-11-29.pdf>
- Ontario Student Nutrition Program – Southwest Region. (2019). *Adopt a Program*. Author. <https://osnp.ca/donate/adopt-a-program/>
- Pitt, H., & Jones, M. (2016). Scaling up and out as a pathway for food system transitions. *Sustainability*, 8(10), 1025. <https://doi.org/10.3390/SU8101025>
- Plakias, Z. T., Klaiber, H. A., & Roe, B. E. (2020). Trade-offs in farm-to-school implementation: Larger foodsheds drive greater local food expenditures. *Journal of Agricultural and Resource Economics*, 45(2), 232–243. <https://doi.org/10.22004/ag.econ.302452>



- Plano Clark, V. L., Foote, L. A., & Walton, J. B. (2018). Intersecting Mixed Methods and Case Study Research: Design possibilities and challenges. *International Journal of Multiple Research Approaches*, 10(1), 14–29.
- Powell, L. J., & Wittman, H. (2018). Farm to school in British Columbia: mobilizing food literacy for food sovereignty. *Agriculture and Human Values*, 35(1), 193–206. <https://doi.org/10.1007/s10460-017-9815-7>
- Reynolds, J., & Hunter, B. (2019). From contracts to culture: Exploring how to leverage local, sustainable food purchasing by institutions for food system change. *Canadian Food Studies*, 6(1), 8–21. <https://doi.org/10.15353/cfs-rcea.v6i1.285>
- Rosenberg, N., & Leib, E. B. (2011, May). *Expanding farm to school in Mississippi: Analysis and recommendations*. Delta Directions: Publications. 6. [https://egrove.olemiss.edu/deltadirections\\_pub/6](https://egrove.olemiss.edu/deltadirections_pub/6)
- Ruetz, A. T. (2022, January 17). Canada’s pandemic recovery urgently needs a national school meal program. *The Conversation*. <https://theconversation.com/canadas-pandemic-recovery-urgently-needs-a-national-school-meal-program-174226>
- Ruetz, A. T. (2023, January). *What we heard: Minister Gould’s roundtable on the National School Food Policy at the University of Guelph*. Report. Arrell Food Institute. <https://arrellfoodinstitute.ca/national-food-policy-roundtable/>
- Ruetz, A. T., & McKenna, M. L. (2021). Characteristics of Canadian school food programs funded by provinces and territories. *Canadian Food Studies*, 8(3), 70–106. <https://doi.org/10.15353/cfs-rcea.v8i3.483>
- Stevenson, G. (2008). Values-based food supply chains: strategies for agri-food enterprises-of-the-middle. In Thomas A. Lyson, G.W. Stevenson, Rick Welsh *Food and the Mid-Level Farm: Renewing an Agriculture of the Middle* (p. 119–144). MIT Press. <https://doi.org/10.7551/mitpress/7666.003.0012>
- Student Nutrition Ontario. (2018). *Student Nutrition Ontario 2017/18 Annual Report*. <https://studentnutritionontario.ca/wp-content/uploads/2017/04/Annual-Report-16-1709.pdf>
- Trudeau, J. (2021a, December 16). [Minister of Agriculture and Agri-Food Mandate Letter]. Government of Canada.
- Trudeau, J. (2021b, December 16). [Minister of Families, Children and Social Development Mandate Letter]. Government of Canada.
- Tuck, B., Haynes, M., King, R., & Pesch, R. (2010). The economic impact of farm-to-school lunch programs: A Central Minnesota example. University of Minnesota Extension. <http://hdl.handle.net/11299/171560>
- Tugault-Lafleur, C. N., Black, J. L., & Barr, S. I. (2018). Lunch-time food source is associated with school hour and school day diet quality among Canadian children. *Journal of Human Nutrition and Dietetics: The Official Journal of the British Dietetic Association*, 31(1), 96–107. <https://doi.org/10.1111/JHN.12500>
- Vallianatos, M., Gottlieb, R., & Haase, M. A. (2004). Farm-to-school: Strategies for urban health, combating sprawl, and establishing a community food systems approach. *Journal of Planning Education and Research*, 23(4), 414–423. <https://doi.org/10.1177/0739456X04264765>



- Victorian Order of Nurses - Windsor-Essex Site. (2015). *The Ontario Student Nutrition Program - Southwest Region*.
- Watson, J., Treadwell, D., & Bucklin, R. (2018). Economic analysis of local food procurement in Southwest Florida's farm to school programs. *Journal of Agriculture, Food Systems, and Community Development*, 8(3), 61–84. <https://doi.org/10.5304/jafscd.2018.083.011>
- Watson, P., Wilson, J., Thilmany, D., & Winter, S. (2007). Determining Economic Contributions and Impacts: What is the difference and why do we care? *Journal of Regional Analysis & Policy*, 37(2), 140–146. <https://www.ntc.blm.gov/krc/uploads/74/Watson,%20et%20al%20Impacts%20vs%20Contribution%2037-2-6.pdf>